Occupational HAZARDS

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MAY 9 - 1949
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THERE'S PROFIT IN PREVENTION

MAY
1949

•

ROUTE TO
OUR PLANT
E PROTECTION
EN: ARTICLES
ON FIRE
PROTECTION
OR INDUSTRY

•

IN THIS ISSUE:

STERILIZING PROTECTIVE EQUIPMENT
ORGANIZING FIRE BRIGADES
IMPORTANCE OF LOCAL EXHAUST VENTILATION

THIS 3 SECTION DUST CONTROL SYSTEM ...provides 3 distinct advantages

1. Economical night shift operation
2. Higher collecting efficiency
3. Flexibility

This installation in the buffing and polishing department of this well-known nameplate manufacturer illustrates the way in which KIRK & BLUM engineers are able to design, fabricate and install the equipment to meet your individual requirements.

IN providing a dust control system at the Nameplate & Monogram Company, Spencerville, Ohio, KIRK & BLUM Engineers designed a 3-system arrangement to accommodate special conditions within this particular plant. The results obtained in actual operation suggest that similar systems would be advantageous in many plants.

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[1] Greek and Roman Sculpture — A. Furtwangler and H. L. Urlichs
[2] Aeneid
[3] Naturalis Historia

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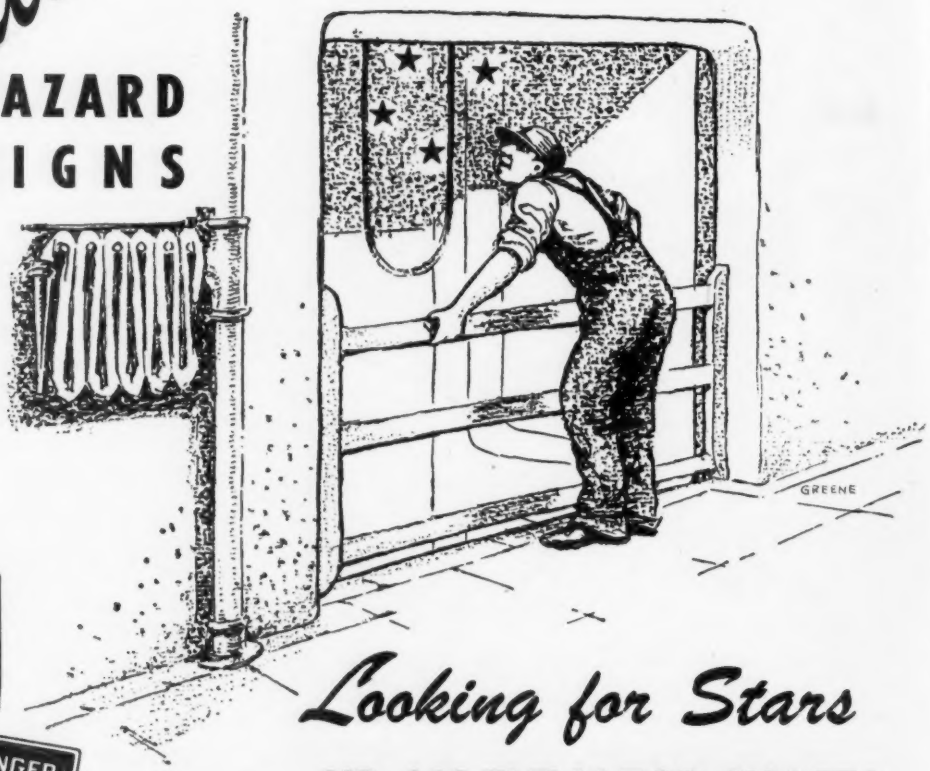

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help teach men to save their heads by USING them outside the shaft.

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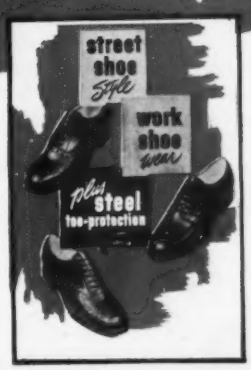

They're two shoes in one: rugged, dependable safety shoes on the job . . . handsome, dressy street shoes after hours. They cost your worker ***less*** than ordinary street shoes of equal quality. They eliminate the need for an "extra" pair of work shoes. They come with straight tip, wing tip, moccasin tip — even with a breezy, new woven style for cool, Summer comfort! ***Have your men seen them?***

FREE! **Send today for any quantity you need of this foot safety poster showing the NEW type of safety-dress shoes. 12 x 18. No advertising.**

*T. M. Reg.

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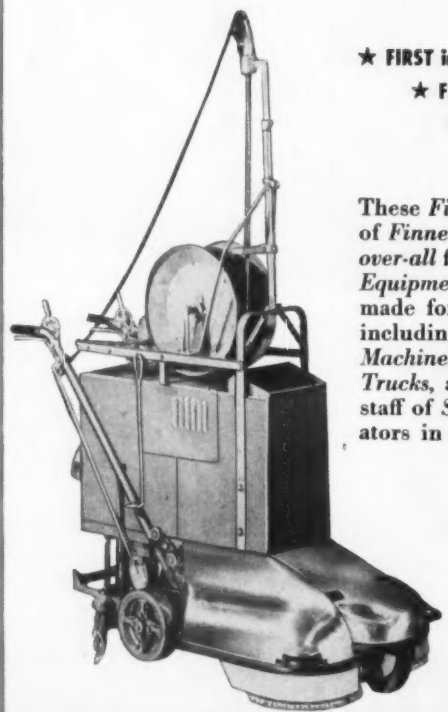
IN FLOOR CARE



★ **FIRST in the manufacture of Mechanical Equipment for Floor-Scrubbing**

★ **FIRST to offer a *System* of Floor Care**

★ **FIRST to produce Combination Scrubber-Vacuum Machines**

★ **FIRST to establish a Nation-Wide Staff of Specialists in Floor Care**

These *Firsts* show the *scope* of *Finnell* leadership and, more important, of *Finnell* service. *Finnell* offers a *System* of floor care that affords an *over-all* floor-maintenance economy. This *System* provides for supplying *Equipment* that exactly fits the individual need . . . *Cleansers* specially made for machine-scrubbing . . . *Sealers and Waxes* in specific types, including waxes that can be *applied electrically* with the same *Finnell Machines* used for polishing and dry-cleaning . . . *Steel-Wool Pads, Mop Trucks,* and other accessory equipment. And through its nation-wide staff of *Specialists, Finnell* also provides for training maintenance operators in the proper use of *Finnell Equipment and Supplies* . . . and for recommending cleaning schedules, et cetera, for most effectual care. These *Specialists* share *Finnell's four decades of experience.*

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BRANCHES IN ALL PRINCIPAL CITIES

Occupational HAZARDS

VOLUME 11 • No. 7

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"THERE'S PROFIT IN PREVENTION"

Silhouetted against the light from molten iron, workmen watch as a blast furnace is tapped in the Rouge plant of the Ford Motor Company. Completely outfitted, these men illustrate how safety is paramount at Ford.

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AO 607 Safety Goggle

A Big Money's-Worth of Protection at Low Cost!

From its Shatter-Resistant Acetate Lens to its Lightweight Plastic Frame, the AO 607 offers assured protection with "bonuses" in comfort, light weight and smart appearance. The single lens lets the worker see everything that's going on through exceptional wide-angle vision—and is quickly replaceable.* Broad nose pads distribute goggle weight evenly for extra comfort.

Frame is 100% durable plastic with high set end pieces for clear vision laterally as well as forward. No metal touches wearer. Cable temples are comfort type with metal core for quick adjusting—acetate enclosed for anti-corrosion.

The AO 607 MAY BE WORN DIRECTLY OVER EYES OR PERSONAL SPECTACLES. If protection against bright light and glare is needed as well as protection against flying particles, the goggle is available with green acetate lenses. Your nearest AO Safety Products Representative can supply you with this low cost goggle.

*Removing and replacing a lens is simple and easy. Hold goggle firmly and press lens with both thumbs from inside, at top, and lens snaps out of frame. To insert—place slots at each end of lens in frame. Work top of lens into groove in frame.

American Optical Company
Safety Products Division

Southbridge, Massachusetts • Branches in Principal Cities

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ANCHOR FLANGE STEEL BOX TOE

...The Secret to Surer Protection

Surer protection plus these quality and comfort features make Hy-Test the world's largest selling safety shoe...

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Insure Worker's Feet in Sure Protection

with **HY-TEST** ANCHOR FLANGE *Safety Shoes*

THE WORLD'S LARGEST SELLING SAFETY SHOE

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No Trick at all!

AVOID SLIPPING ACCIDENTS

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ABSORBENT

Absorbs all types of Oils, Greases and Fats from Floors

Oil-Dri ALL-PURPOSE

ABSORBENT

Absorbs all types of Oils, Greases and Fats plus Water and Soluble Oil Solutions from Floors

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Just put it on grease spots

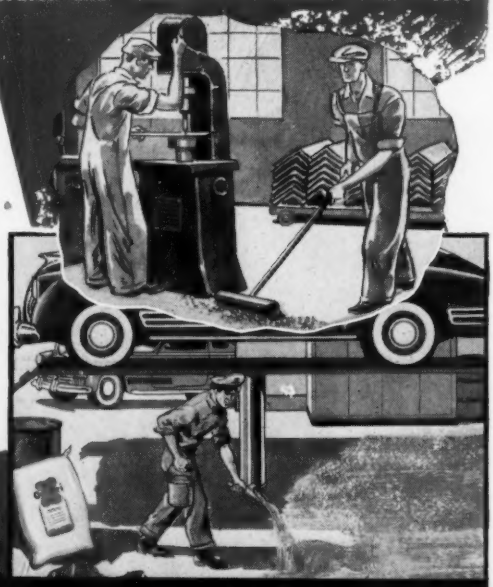
ECONOMICAL...
Saves time - Saves labor

Ideal for: • Restaurants • Taverns • Machine Shops • Factories • Breweries • Service Stations and Pits • Garages • Repair Departments • Power Plants • Kitchens and Food Plants • Elevator Pits

CHECK THESE ADVANTAGES

1 Reduces slipping hazards *2* Reduces fire hazards *3* Improves floor conditions *4* Reduces maintenance labor costs *5* Reduces insurance penalties *6* Improves working conditions *7* Permits safer, easier, faster walking on plant floors *8* Improves plant housekeeping

DONT PUT IT OFF - - PUT IT ON!



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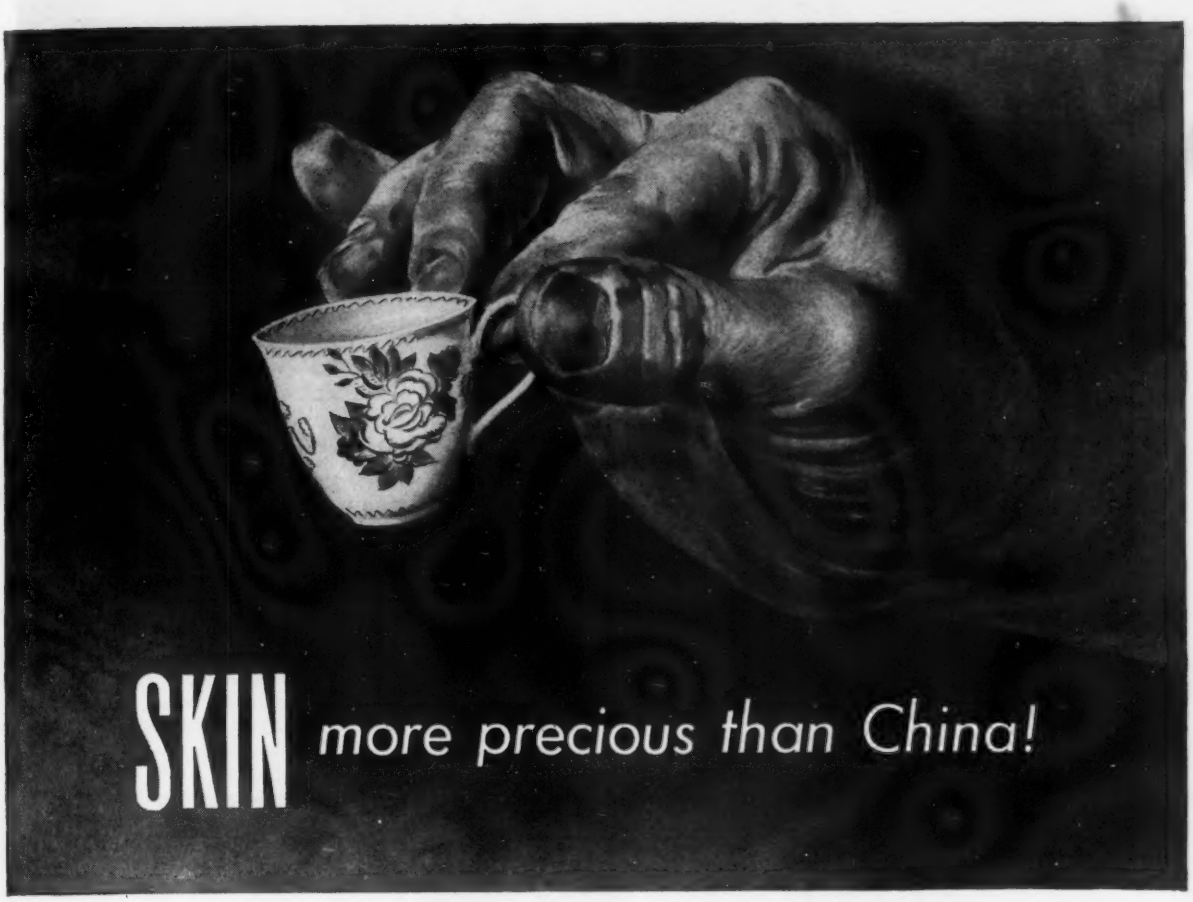

Yes, workers' hands are more precious to industry than all the rare china in the universe. Production efficiency and profits hinge on their healthy condition. Unfortunately, like china, these hands are readily vulnerable to damage . . . the skin must be protected against the dangerous effects of specific industrial and chemical irritants in every plant.

To combat this "dermatitis danger," West offers a form of hand protection to fit every need.

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A gentle-acting powdered preparation made of fine corn-meal granules—with *LANOLIN added* for protection against loss of natural skin oils. Removes grease, dirt and grime quickly, safely and thoroughly. Contains no harsh ingredients or excess alkali — the perfect safeguard against damage-causing irritants.

—WEST SULPHO LIQUID HAND CLEANER

Formulated of sulphonated vegetable oil, with an ideally neutral pH. Sulpho is especially designed not to defat the skin of workers whose hands are constantly exposed to solvents, paint thinners, degreasing agents and other defatting materials.

—WEST PROTECTIVE CREAMS

A specific scientific formula to combat practically every type of industrial dermatitis. Rubbed gently into the skin *before* exposure, each ointment forms a smooth, lasting "invisible glove" of protection.

West will be glad to help plan an effective dermatitis prevention program for your plant. WRITE US TODAY!

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Gentlemen:
Please send me FREE booklets and samples of LAN-O-KLEEN ☐
SULPHO ☐ PROTECTIVE CREAMS ☐

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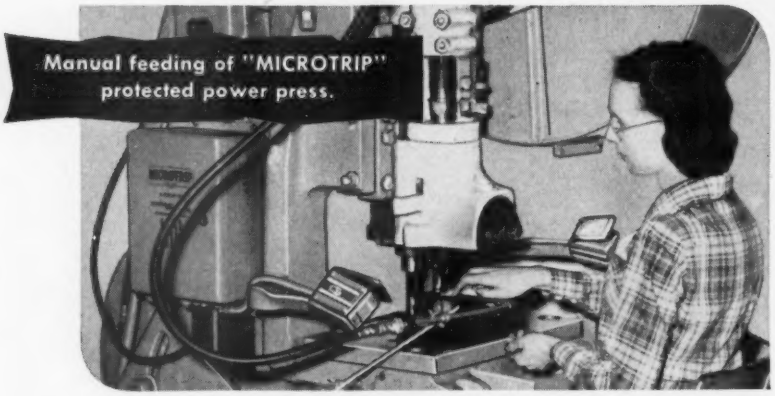
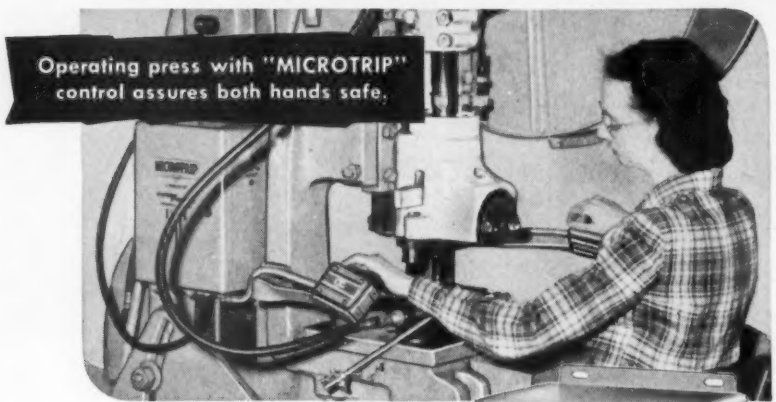
14

MICROTRIP . . . For Safe Operation of "Hard-to-Guard" Power Presses!



Manual feeding of "MICROTRIP" protected power press.



Operating press with "MICROTRIP" control assures both hands safe.

Many press operations . . . particularly in short runs . . . are expensive and impractical to guard by special means.

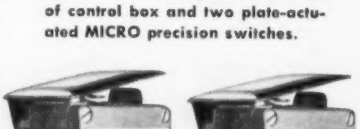
In such cases, where manual press feeding is required, "MICROTRIP" control gives complete assurance that the press control circuit cannot be operated unless both hands of the operator are out of danger.

The ten-square-inch area of the actuator makes an easy target which speeds up power press operation. The light touch actuation relieves operator fatigue and in many cases increases production up to 25%.

"MICROTRIP" control cannot be tied down or "cheated." Both actuator plates must be touched at the same time or the control circuit becomes inoperative until reset button on control box is reset.

Reduce the toll of costly and serious power press accidents. Find out how simply "MICROTRIP" control can be installed on your present equipment. Write or call your nearest MICRO SWITCH office today.

"MICROTRIP" safety device consists of control box and two plate-actuated MICRO precision switches.



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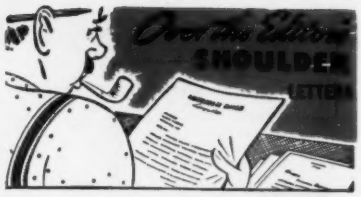

Do you have any questions, theories or ideas concerning industrial health or safety? If you want to give them a good airing—send 'em along. We'll publish all space permits.

About Teaching First-Aid

OCCUPATIONAL HAZARDS:

Reference is made to the article "Instructing Amateurs in First Aid," by James B. Black, published in the January 1949 issue of OCCUPATIONAL HAZARDS.

While I do not wish to enter into a controversy, I feel that some comment and criticism is due the article as well as its author.

It is almost unbelievable that a man in the high position that Mr. Black evidently holds would be in such complete misunderstanding of the true concepts of first-aid instruction. To say that it is a fallacy or a waste of time to attempt to teach a man more than you expect his mind to retain is a dangerous statement. We might as well stop teaching children the multiplication tables because we believe they may not come up with the ready answer of 13 x 12 on a moment's notice. Do you, Mr. Editor, know the product of 13 x 12 without stopping for a moment to compute it? Neither do we,—yet we were taught it at one time, weren't we? Was that time wasted?

First-aid instruction is the same as any instruction and much simpler than the multiplication tables. Of course, it must be repeated from time to time.

In my more than ten years of experience in teaching first-aid classes I have found many more benefits derived from the knowledge of first-aid than are mentioned in Mr. Black's article. It prevents accidents, serves as a morale builder, and establishes confidence in the injured employee as well as the first-aider.

In the article referred to, the opening statement is certainly incorrect. In most plants now there is a good first-aid set-up. The injured employee does receive prompt, efficient and intelligent first-aid. Further along in the article Mr. Black

says, "It is highly recommended that pressure points and the use of tourniquets not be discussed, because, etc., etc." Who *highly recommends* this? Can Mr. Black cite competent and accepted authority—or is he writing his *own* first-aid course? If so, we sympathize with the unfortunate employees under his safety supervision!

In closing, I should like to point out that your magazine's apparent endorsement of Mr. Black's article as evidenced by your "box" in heavy type is ill-advised. It is not a "down-to-earth" article and does not put common sense into the subject of teaching first-aid to the average plant employee. And just what ideas has the author put forth to solve anything except the erroneous idea that first-aid study is unimportant, so why bother with it? Ha!—L. A. Van Fleet, First-Aid Instructor, Phoenix, Ariz.

Thanks to reader Van Fleet for the above letter, which we are publishing because we always like to present both sides of any controversial matter such as this seems to be. Mr. Black's opening paragraph was:—"If you were to be seriously injured on the highway, at home or in the plant, what chances would you have of receiving prompt, efficient, intelligent first-aid? Practically none."

In the main, we agree with Mr. Black 100% and we like the suggestions he made in his article to alter this situation. It is true that if a person becomes seriously injured in a large plant his chances of intelligent first-aid treatment are excellent because most such plants are set up with adequate facilities. However, as Mr. Black pointed out in his article, the majority of the persons who become seriously injured on the highway or in the home or in plants other than the few large plants with adequate first-aid facilities have small chance indeed of getting professional first-aid care. Mr. Van Fleet doesn't seem to like the methods Mr. Black suggested to train the greatest number of persons possible in fundamental first-aid practices. We do. We'd like to hear comments from others on this. The article appeared on page 20 of our January issue.—Ed.

COMING!
Watch for the June Issue.
Full of Articles About
Industrial Fire Protection

Case #131 — ***This large company finished giving its offices a new, modern look, when bingo! . . . a rash of falls started. The trouble: slick floors. The cure: a Legge Safety Engineer shows them . . .***

How to take the slips out of good business showmanship

Mr. Higby: Look what's happening! We wanted good-looking floors, but we got accidents. We want the floors taken out!

Legge Safety Engineer: The floors aren't at fault, Mr. Higby. It's that slick finish. They need a polish that's Non-Slip.

Mr. Higby: No they don't! I've heard polish makes floors slippery.

Legge Safety Engineer: No doubt you have. It's a popular misconception. But your floors need polish to protect them. Besides, dirty-looking, unpolished floors would disfigure your offices. That's why Legge Non-Slip polishes are widely used . . . and recommended by leading casualty insurance companies. They preserve floors and give a good-looking shine. Yet they're up to 95% accident-proof. Give me a week and I'll prove it.

(A week later) Mr. Higby: You were right. The floors shine nicely. And the accidents have stopped. How did you do it?

Legge Safety Engineer: Two ways. First, applied Legge Non-Slip products. Second, taught your crews the right way to use them. And I'll keep coming back to make sure they follow through.

Get this trouble-shooter on your side

The Legge Safety engineer in your area serves you as a floor safety consultant. He sets up a complete floor safety program and fits it to your individual requirements. He trains your maintenance crews, supervises them, and takes the floor safety responsibility off your shoulders. His advice is free; his supervision is part of your purchase of Legge Non-Slip floor-care products.

Before your floors trip you up, get the whole Legge System story. Clip the coupon to your letterhead and mail. *Walter G. Legge Company Inc., New York 17, N. Y. Branch offices in principal cities.*

LEGGE
SYSTEM
of Non-Slip Floor Maintenance

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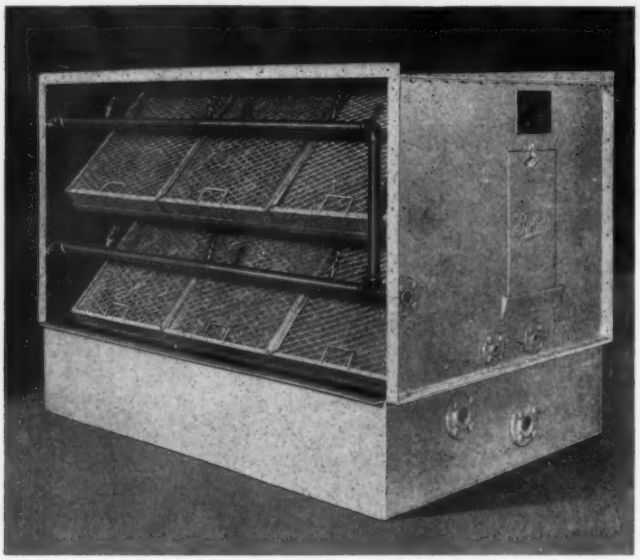
Please send me a free, no-obligation copy of *Mr. Higby Learned About Floor Safety the Hard Way.*
Signed.....
Title.....
Type of floor.....
Area.....sq. ft.
O-A5

VISIT US AT THE MICHIGAN SAFETY CONFERENCE, DETROIT, AND AT BOOTH 11, MID-WEST SAFETY CONFERENCE, CHICAGO.



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Put "Buffalo" Wet Glass Cell Air Washers On Your Conditioning Job

They clean your air constantly and thoroughly by passing it through 3-inch-deep packs of glass fibre filaments, wetted down by fine, dense spray. **Go far beyond ordinary air washing methods!**

These units pay for themselves by positive reduction of the dust hazard affecting health, personal safety and industrial processes. A safe plant is a more profitable plant! Write for Bulletin 3457—see how simple it is to condition YOUR plant!

"Buffalo" FIRST FOR FANS

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529 BROADWAY BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Branch offices in all Principal Cities

VENTILATING FORCED DRAFT | AIR WASHING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT PRESSURE BLOWING | EXHAUSTING

"WOW! I CAN REALLY SEE THRU MY GOGGLES . . . . . Thanks to K-LENS-M Lens Cleaner"

Boost YOUR SAFETY PROGRAM *with* K-LENS-M GOGGLE STATIONS

Workers' objections to wearing safety goggles disappear when they discover the difference K-LENS-M Lens Cleaner makes. Amazing solution contains no soap product . . . easily removes oil and smudges WITHOUT STREAKING!

You encourage use of goggles when you install K-LENS-M Dispenser Cabinets at handy locations. Workers press the small pump to spray film-covered goggles or face shields . . . draw lint-free K-LENS-M Tissue from bottom of cabinet—and wipe glasses CLEAN! Waste tissue is dropped into cabinet space. Complete unit only $12.50. MAIL YOUR TRIAL ORDER TODAY.

Handsome all-metal cabinet. Easy to install, operate and service. Baked enamel finish in white or safety green. More details on request.

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Just in time for hot weather!

Iron Age

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SAFETY OXFORDS

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Sizes 5-12
Widths A-E

AIR CONDITION YOUR WORKERS' FEET FOR SUMMER COMFORT

These stylish *ventilated* Iron Age steel toe safety oxfords in ruby rich burgundy elk present the greatest hot weather shoe value ever offered to workers in industry. Vent holes in upper quarter draw in cooling air currents with every step. Porous lining under basket weave permits the foot to breathe. Top quality construction features include custom type hand lacing, "Leatherplus" outsoles, Grade A rubber heels. Order your stock now to assure satisfying employee demands.

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The Safety Shoe for Industrial America

Iron Age DIVISION
H. CHILDS & CO., INC., PITTSBURGH 22, PA.

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CESCO protective equipment is used in plants where safety standards are the highest. That's a recommendation to you.

***YOU** can improve safety conditions in your plant by reading* CESCO's *new 64-page publication—"Where to Use, How to Use and How to Select Industrial Protective Equipment." Write for your copy today!*

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MAY 15 IS "I AM AN AMERICAN DAY"

QUITE a statement, brother! And it covers a wide bracket of folks in all ranks.

Ours is the freedom to pick and choose. Not just goods in stores but the good in life. Men with big ideas and the guts to carry them out can climb high. Others with more moderate ambitions can pick and choose their jobs, professions or trades and live simpler . . . but amazingly comfortable . . . lives. Ours is the freedom to worship as we choose. Ours is the freedom to say what we think, to do as we please.

Even the happy hobo is an example. The open road, the companionship of the "jungle", the backdoor panhandling, and the scrupulous avoidance of work are his choice. Nobody has the right to pop him in jail or chain him to a job. As long as he's an honest hobo, he's free as the air. He's an American too.

On May 15th comes "I Am An American Day." Why specialize on a day? We ought to be whooping it up and cheering hoarsely most of the time. And we WOULD if we counted our American blessings . . . all the big and little freedoms won and held for us by 16 generations of those who went before.

Be in the front row on May 15 cheering "I Am An American" till the rafters ring. Look for me . . . I'll be there.

Sectional sink used in washing and sterilizing protective equipment at the Allis-Chalmers Manufacturing Company, West Allis, Wisconsin. (1) First sink used for washing; (2) Second sink used for rinsing; (3) Third used for sterilizing.

STERILIZING PROTECTIVE EQUIPMENT

WALTER F. SCHOLTZ
Supervisor, Industrial Hygiene
Health and Safety Department
Allis-Chalmers Manufacuring Company,
West Allis Works

Of much importance to the success of any plant's overall hygiene and sanitation program is the method used to insure that employees are supplied with protective equipment that is sterile and in good repair. This article, by Mr. Scholtz, is directed to Occupational Hazard readers in the hope that the methods used by Allis-Chalmers might point the way to similar operation in other plants.

AN effective method for the sterilization of protective equipment has been developed by the Health and Safety Department of the Allis-Chalmers Manufacturing Company, West Allis, Wisconsin. Because the method has proved successful through four years of actual use, it is believed that others who have similar problems may benefit by our experience.

Our former method was less desirable because a closed container had to be employed to keep noxious vapors from escaping. This meant, too, that special containers had to be kept on hand for the sterilization of larger pieces of equipment such as sandblast helmets, welding helmets, and rubber boots. After sterilizing this equipment it then had to be carefully wiped and exposed to the atmosphere for several days to remove the objectionable odor. During this time it would be exposed to dust and other airborne contaminants and

would of necessity be returned to the worker not completely sterilized.

In our search for a method of sterilizing equipment we decided on the present method in which Roccal is diluted with water. This bath lends itself to sterilizing protective equipment of any size or quantity with a minimum of time and handling. The result is a clean and sterile product ready for reissuance in a matter of minutes after our Protective Equipment Unit receives it.

The Protective Equipment Unit workroom consists of a workbench three feet by six feet, a three-sectioned sink with drainboards on each side, and a drying oven.

Sterilizing Procedure

When a soiled piece of equipment is brought in from the shops for cleaning, it is first completely dissembled. This allows for a thorough inspection for worn or broken parts and also aids in a better cleaning job. It then is placed in the left-hand basin of the three-sectioned sink where dirt and grime are removed with a soft brush, 30 per cent liquid soap, and water. After scrubbing, the equipment next is placed in the center basin of the sink where it is rinsed with warm running water before immersing it in the sterilizing bath. Finally, it is immersed in the sterilizing bath in the right-hand secton of the sink for ten minutes. In order to speed the drying of sterilized equipment a large oven with controlled air flow and automatic temperature regulators is used.

The last step consists of reassembling all the equipment sterilized, and packaging the smaller items such as respirators and goggles in cellophane bags. The larger pieces of equipment are wrapped in kraft paper or placed in large cardboard cartons and then stored for further use or returned to the shops for immediate use.

On most operations where respirators are worn the workers return their respirators used during the shift to the department foreman at the end of the shift for cleaning and sterilizing. Sterile respirators are issued to them at the start of their shift.

Bath Contents

The sterilizing bath is prepared by diluting six ounces of Roccal, which costs approximately five cents per ounce, with six gallons of water (one ounce to the gallon).

Bacteria tests made by the Wisconsin State Board of Health reveal that the sterilizing agent was still effective after one week of use. Further, to measure its effectiveness the concentration of the bath was diluted five times (one part of used bath to five parts of water) and still found to be effective as a disinfecting agent. For these tests the total immersed time was ten minutes.

Work Capacity

In an average week the following number of items are sterilized in one bath: 125 respirators (all types), 205 cup-type goggles, 150 special goggles, 110 goggle cases, 6 rubber suits (rubber overalls and jackets), 5 pairs of rubber boots, 6 large sandblast helmets, 12 welding helmets, 4 air line respirators, and 200 feet of air line hose. One hundred pieces of the following miscellaneous items were also sterilized: rubber gloves, face shields, rubber aprons, dust masks, and gas masks.

During the time this method has been in use no adverse effects from immersing the hands in the sterilizing bath were noted. It will not leave the hands raw and sore. This method has thus far proved satisfactory not only in effectively cleaning and sterilizing but also in carrying on the operations of our personal protective equipment unit.

Protective equipment is carefully checked (above) before cleaning and sterilizing. Respirators and safety goggles are then packaged after sterilization (below) in sanitary cellophane bags for reissue to employees.

Drying oven with controlled air flow and automatic temperature regulators.

Controlling Toxic Chemicals Through . . .

LOCAL EXHAUST VENTILATION

1. ENCLOSE OPERATIONS
2. EXHAUST FUMES
3. SAFEGUARD AGAINST FIRE
4. "IMAGINEERING"

Paint spray booth—Note water curtain used to whisk fumes away from operator. Sprinkler head above.

by
EDWARD A. CLARK
Safety Director—Frankford Arsenal
Chairman—Federal Safety Council of Philadelphia

ONE of the most vital Safety Engineering activities at Frankford Arsenal is concerned with those industrial hygiene or occupational hazards commonly known as "toxic chemicals". The increase in the industrial use of solvents alone the past ten years has sparked a program into allied fields that has been startling in its scope.

Almost daily new chemicals are being added as aids to production and the end is nowhere near in sight. Most of these seem essential to the progress, development and expansion of our national industrial growth, and almost all of them either have toxic characteristics or possess flammable properties. Some present very serious hazards in *both* respects—such as Carbon Disulphide.

Of course, our first approach to the use of such material is—"Is it necessary to produce the end result? Are there suitable and safer substitutes?" Assuring that the material in question must be used, the next problem is to determine such characteristics as flash point, explosive concentrations, vapor density, maximum allowable toxic concentrations of an airfume mixture, and anticipated operating procedures. We try to work *with* nature not fight her.

Where feasible, we totally enclose the operation. The next best step is to provide local exhaust ventilation close to the source of origin, and pull the contamination *away* from the operator at a calculated rate of speed and volume. If engineering on this point is completely satisfactory there may be no need for additional respirator protection except for emergencies. Some of our varied solutions at Frankford Arsenal along this line are shown in the accompanying illustrations.

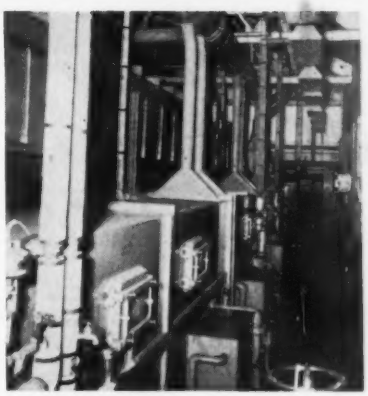
Attention is given simultaneously to those elements of fire protection such as static grounding, electrical wiring and equipment, non-ferrous fan blades and tools, cleaning and inspection, automatic sprinklers, and housekeeping.

We also consider such general protective features as employees clothing, periodic physical examinations, hand soaps, protective creams, maintenance, sanitation and health facilities and standards, illumination, emergency showers and blankets, etc, etc. But in this short article we are concentrating on the phase of local exhaust ventilation, particularly from the point of view that no job is impossible and no chemical too hazardous to use.

It is very important to stress that when considering the various dusts, fumes, mists, gases or vapors, we are not satisfied to keep just under those concentrations approved as safe for an 8 hour day. We strive to reduce them to as low a figure as possible. As an example—Concentrations of Methyl Chloride may be currently approved at 100 ppm., but we would not be content until it were closer to 10 ppm. For after all, these MAC figures are only target figures, and subject to change as medical experience warrant. Several have been recently reduced, and it is a nice feeling to "beat the gun" knowing your protective steps for the employees' benefit is more than up-to-date. This is also very important when using a new chemical about which we know practically nothing as to its health hazards.

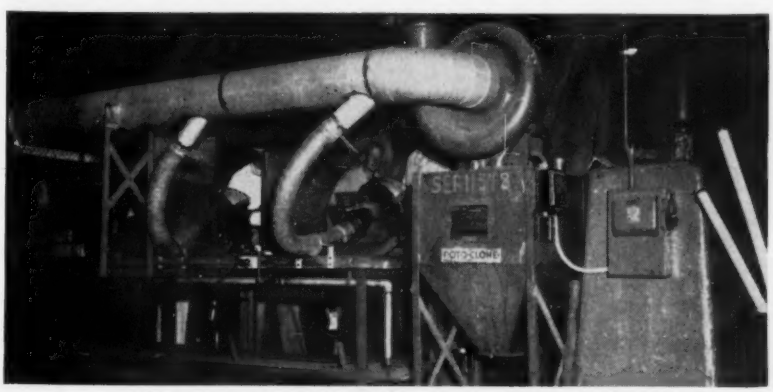
The day is past when an engineer would use an overhead hood, and attempt to draw contaminated vapors (whose vapor density may be three times that of air) against gravity and across the face of the operator. "Imagineering" is a necessary asset to adapt hazardous chemicals safely to progressive industrial needs. And the up-to-date Safety Engineer does not shirk his responsibilities in this field.

The opinions and views expressed in this article are those of the author and as such do not necessarily reflect the opinions of the War Department.

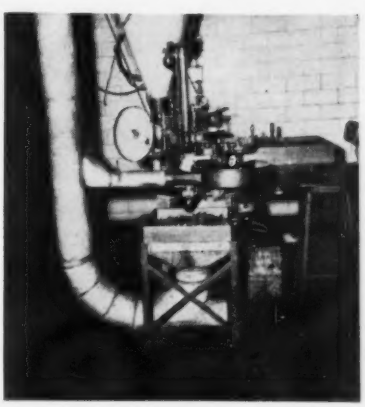


Typical local exhaust ventilation installations. . .

. . . At the Frankford Arsenal



Local exhaust for grinding interior of "Jato" nozzle units.



HOW DO YOUR RATES COMPARE?

ACCORDING to the Monthly Labor Review, work injuries in manufacturing industries declined during the second quarter of 1948, not only in absolute number but also in the rate per million man-hours worked. The slight seasonal upswing in the injury-frequency rate noted in the first quarter was reversed and the general trend downward was resumed. From a rate of 14.5 disabling work injuries per million employee-hours worked in March 1948, the all-manufacturing injury-frequency rate decreased to 13.9 in April, 13.5 in May, and 13.2 in June.

This decline was partially seasonal. Typically, May and June have shown lower rates than those reported during the first quarter of the same year; however, April usually has been a month of higher rates. The general downward trend is apparent from a comparison of the average rate of 13.5 for the second quarter of 1948 with the rate of 15.7 for the second quarter of 1947 and with 18.1 for the second quarter of 1946. The figure of 14.1 for the first quarter of 1948 was also considerably below the average of 16.0 for the first quarter of 1947. The injury record for the first half of 1948 points to a continuance of the improvement in work safety achieved in manufacturing during 1947.

It is estimated that during the second quarter of 1948 there were approximately 110,600 work injuries disabling employees in manufacturing establishments for 1 or more days. This represents a decrease of 4,200 from the corresponding figure for the first quarter and is 12,400 below that for the second quarter of 1947. About 400 of the injured workers died as a result of their injuries, and 5,200 others were known to have suffered permanent physical impairments. Later information concerning the final outcome of injuries first reported as causing temporary disability may require increases in these estimates of the more serious cases.

(Please turn to page 22)

Industrial injury frequency rates for selected manufacturing industries, second quarter, 1948, with cumulative rates for 1948[1]

A table prepared by the Bureau of Labor Statistics, U. S. Department of Labor.

Industry [2]	Second quarter, 1948					Frequency rate	
	Number of establishments [3]	Frequency rate [4] for—				January–June, 1948 (cumulative) [4]	1947: Annual (final) [5]
		April	May	June	Second quarter		
Apparel:							
Clothing, men's and boys'	344	5.4	6.3	7.6	6.4	7.3	7.0
Clothing, women's and children's	281	2.5	3.6	5.8	3.9	4.8	4.3
Apparel and accessories, not elsewhere classified	47	(6)	(6)	(6)	5.7	6.4	7.7
Trimmings & fabricated textile products, not elsewhere classified	68	9.6	16.8	17.3	14.5	14.4	12.0
Chemicals:							
Compressed and liquefied gases	37	13.3	6.1	8.9	9.6	7.9	9.8
Drugs, toiletries, and insecticides	68	8.5	10.5	10.3	9.7	9.7	12.0
Explosives	40	1.4	2.7	7.5	4.0	3.7	5.3
Industrial chemicals	179	9.0	9.4	9.5	9.3	9.5	13.1
Paints, varnishes, and colors	61	9.5	9.6	11.4	10.2	11.2	17.3
Plastic materials, except rubber	26	4.8	6.2	5.1	5.4	5.5	7.2
Soap and glycerin	45	4.5	3.9	5.4	4.6	5.6	9.4
Synthetic rubber	18	3.9	2.0	2.0	2.7	1.7	1.9
Synthetic textile fibers	19	2.1	3.3	2.9	2.8	3.1	5.8
Chemical products, not elsewhere classified	48	8.7	8.8	7.9	8.5	10.6	16.9
Electrical equipment:							
Automotive electrical equipment	23	20.9	17.6	22.4	20.3	18.9	19.2
Batteries	27	14.4	19.3	11.3	15.0	21.1	25.0
Communication and signaling equipment, except radio	20	6.1	3.7	4.8	4.9	4.7	5.2
Electrical appliances	30	18.4	15.1	11.9	15.3	14.4	15.0
Electrical equipment for industrial use	250	8.4	6.7	6.1	7.1	7.7	9.5
Electric lamps (bulbs)	16	4.0	2.0	2.5	2.9	3.2	3.3
Insulated wire and cable	27	13.9	12.6	12.2	12.9	14.3	13.6
Radios and phonographs	92	4.7	4.5	5.7	5.0	5.3	6.2
Electrical equipment, not elsewhere classified	18	6.2	4.6	4.3	5.0	4.6	5.4
Food:							
Baking	21	31.3	17.2	17.8	21.7	16.5	18.1
Canning and preserving	37	11.4	11.3	13.2	12.0	11.7	27.3
Confectionery	37	13.2	14.7	11.1	13.0	14.3	16.1
Dairy products	126	15.6	26.1	26.7	23.0	23.8	22.7
Distilleries	52	9.7	6.8	7.5	8.1	8.2	11.7
Flour, feed, and grain-mill products	28	11.7	10.9	8.7	10.4	9.1	27.1
Slaughtering and meat packing	318	21.4	22.4	19.5	21.1	21.1	29.9
Food products, not elsewhere classified	36	12.0	13.2	12.0	12.4	13.5	20.5
Furniture and lumber products:							
Furniture, wood	82	20.6	20.2	21.2	20.6	22.0	28.2
Mattresses and bedsprings	116	16.3	21.7	14.2	17.3	20.5	24.9
Wooden containers	209	38.2	42.5	42.0	40.9	40.8	41.9
Miscellaneous wood products, not elsewhere classified	100	26.0	18.4	18.1	21.0	22.9	34.0

Industry	Number of establishments [2]	Second quarter, 1948				Frequency rate	
		Frequency rate [4] for—				January–June, 1948 (cumulative) [4]	1947: Annual (final) [5]
		April	May	June	Second quarter		
Iron and steel:							
Bolts, nuts, washers, and rivets	41	15.2	16.2	16.1	15.8	16.7	19.6
Cold finished steel	32	21.1	28.9	17.6	22.3	21.1	22.8
Cutlery and edge tools	28	19.3	12.7	11.3	14.6	15.3	23.6
Fabricated structural steel	192	23.4	20.2	19.8	21.1	22.3	27.3
Forgings, iron and steel	102	18.9	17.1	17.2	17.8	18.5	28.4
Foundries, iron	337	39.7	37.6	36.0	37.8	37.5	44.5
Foundries, steel	105	28.9	29.6	25.4	27.9	28.3	32.2
Hardware	44	15.8	12.3	13.9	14.1	14.3	16.0
Heating equipment, not elsewhere classified	72	22.7	14.5	19.3	18.8	20.1	34.3
Iron and steel	151	6.3	6.7	6.8	6.6	6.6	8.2
Metal coating and engraving	54	28.8	21.4	16.1	22.1	23.4	28.8
Ornamental metal work	42	29.9	24.5	27.7	27.4	25.5	27.3
Plate fabrication and boiler-shop products	115	34.8	32.0	30.7	32.5	34.2	37.2
Plumbers' supplies	39	30.4	23.0	16.4	19.9	18.0	23.3
Screw-machine products	92	14.3	16.1	15.2	15.2	16.5	19.3
Sheet-metal work	56	13.5	20.0	15.8	16.4	20.3	24.2
Stamped and pressed metal products, not elsewhere classified	206	18.0	16.2	19.4	17.9	19.7	23.4
Steam fittings and apparatus	52	14.0	12.9	18.4	15.2	16.2	25.2
Steel barrels, kegs, drums, and packages	21	[6]	[6]	[6]	19.5	19.7	19.4
Steel springs	15	24.4	18.9	22.2	21.9	25.2	21.2
Tin cans and other tinware	23	19.3	13.6	17.7	16.9	14.6	18.6
Tools, except edge tools	58	17.9	17.8	18.9	18.2	18.9	23.7
Wire and wire products	138	19.1	19.1	23.1	20.4	20.6	21.5
Wrought pipes, welded and heavy-riveted	16	[6]	[6]	[6]	25.3	20.8	24.2
Iron and steel products, not elsewhere classified	23	[6]	[6]	[6]	24.7	20.8	24.5
Leather:							
Boots and shoes, not rubber	226	9.3	10.6	7.5	9.1	9.2	9.6
Leather	34	32.7	27.9	25.6	28.8	26.4	29.4
Lumber:							
Millwork, structural	203	27.5	25.8	28.6	27.3	29.5	36.6
Sawmills	49	48.1	61.3	59.9	56.6	56.6	66.6
Sawmills and planing mills combined	33	38.5	39.8	45.8	41.3	52.3	56.7
Planing mills	74	42.6	40.7	44.0	42.5	46.7	42.3
Plywood mills	42	31.7	40.8	34.6	35.6	38.9	38.5
Machinery, except electric:							
Agricultural machinery and tractors	77	23.4	20.9	19.9	21.4	20.7	23.4
Bearings, ball and roller	32	17.3	21.6	19.7	19.4	16.8	14.4
Commercial and household machinery	115	10.1	9.4	9.0	9.5	9.6	11.6
Construction and mining machinery	115	22.7	21.2	21.9	22.0	22.2	28.5
Elevators, escalators, and conveyors	23	15.7	12.2	16.5	14.9	16.8	20.0
Engines and turbines	47	14.9	13.6	11.6	13.3	12.9	13.6
Food-products machinery	56	14.8	20.3	18.0	17.7	19.5	24.6
General industrial machinery and equipment, not elsewhere classified	187	19.6	15.4	18.0	17.7	19.0	22.6
General machine shops (jobbing and repair)	101	22.2	23.3	25.1	23.5	22.3	24.8
Mechanical measuring and controlling instruments	52	12.6	15.3	11.5	13.1	12.2	14.0
Mechanical power transmission equipment, except ball and roller bearings	65	21.9	23.8	17.7	21.0	18.9	20.3
Metalworking machinery	425	14.7	12.9	13.2	13.6	13.5	15.5
Pumps and compressors	73	20.1	18.9	15.9	18.3	18.9	20.1
Specify industry machinery, not elsewhere classified	122	24.0	20.4	22.1	22.2	22.3	21.4
Textile machinery	27	12.6	11.4	10.5	11.5	11.6	18.4
Nonferrous metals:							
Aluminum and magnesium products	24	23.5	20.9	18.6	21.1	24.1	20.8
Foundries, nonferrous	220	27.3	16.6	23.6	22.6	22.5	27.0
Nonferrous basic shapes and forms	28	11.9	12.9	11.2	12.0	12.6	15.7
Watches, clocks, jewelry, and silverware	39	6.8	7.2	8.1	7.4	7.2	8.0
Nonferrous metal products, not elsewhere classified	83	16.8	17.4	12.4	15.5	15.2	13.3
Ordnance:							
Ordnance and accessories	15	5.5	5.1	3.1	4.6	4.7	5.6
Paper:							
Paper boxes and containers	297	17.3	16.8	18.9	17.7	19.2	21.5
Paper and pulp	355	19.6	20.5	18.7	19.6	19.3	23.6
Paper products, not elsewhere classified	31	17.3	18.7	20.3	18.7	18.4	20.6
Printing:							
Book and job printing	57	7.5	6.9	10.1	8.2	8.6	9.4
Rubber:							
Rubber boots and shoes	15	6.1	5.5	5.3	5.7	5.8	9.8
Rubber tires and tubes	33	7.9	8.7	7.3	8.0	8.6	10.5
Rubber products, not elsewhere classified	78	15.9	16.9	16.7	16.5	16.4	17.9
Stone, clay, and glass:							
Structural clay products	42	21.3	24.4	24.0	23.2	19.0	43.9
Concrete, gypsum, and plaster products	138	[6]	[6]	[6]	34.4	36.5	36.1
Glass	41	12.5	11.6	11.4	11.8	14.4	15.8
Pottery and related products	30	19.9	19.2	23.3	20.8	21.0	21.1
Stone, clay, and glass products, not elsewhere classified	49	18.3	17.7	15.6	17.2	17.0	21.8
Textiles:							
Cotton yarn and textiles	186	8.1	8.2	8.0	8.1	8.6	12.2
Dyeing and finishing textiles	51	12.4	13.0	13.9	13.1	13.2	19.2
Knit goods	78	7.8	8.8	10.2	8.9	8.1	6.9
Rayon and other synthetic and silk textiles	47	9.0	9.7	11.2	10.0	8.8	10.4
Woolen and worsted textiles	142	15.4	12.4	11.8	13.3	13.1	18.6
Miscellaneous textile goods, not elsewhere classified	28	12.5	23.1	22.6	19.3	20.5	23.8
Transportation equipment:							
Aircraft	18	4.5	3.4	3.9	4.0	4.5	4.8
Aircraft parts	26	6.0	5.2	4.7	5.3	6.3	11.1
Motor vehicles	106	9.3	10.7	9.5	9.8	9.8	8.4
Motor-vehicle parts	92	20.0	21.6	18.1	19.8	20.0	17.6
Railroad equipment	51	20.6	19.8	19.7	20.0	19.8	17.9
Shipbuilding and repairs	66	27.0	23.5	23.8	24.9	25.0	25.2
Miscellaneous manufacturing:							
Fabricated plastic products	32	11.2	9.2	13.2	11.3	10.8	18.1
Optical and ophthalmic goods	16	3.5	2.3	1.7	2.5	3.5	7.9
Photographic apparatus and materials	22	5.2	5.7	7.7	6.2	6.3	6.x
Professional and scientific instruments and supplies	61	8.7	7.3	7.3	7.8	7.1	15.x
Miscellaneous manufacturing, not elsewhere classified	139	12.8	9.1	12.8	11.6	11.6	15.x

[1] The average number of disabling industrial injuries for each million employee-hours worked.

[2] A few industries have been omitted because the monthly coverage did not amount to 1,000,000 or more employee-hours worked.

[3] June.

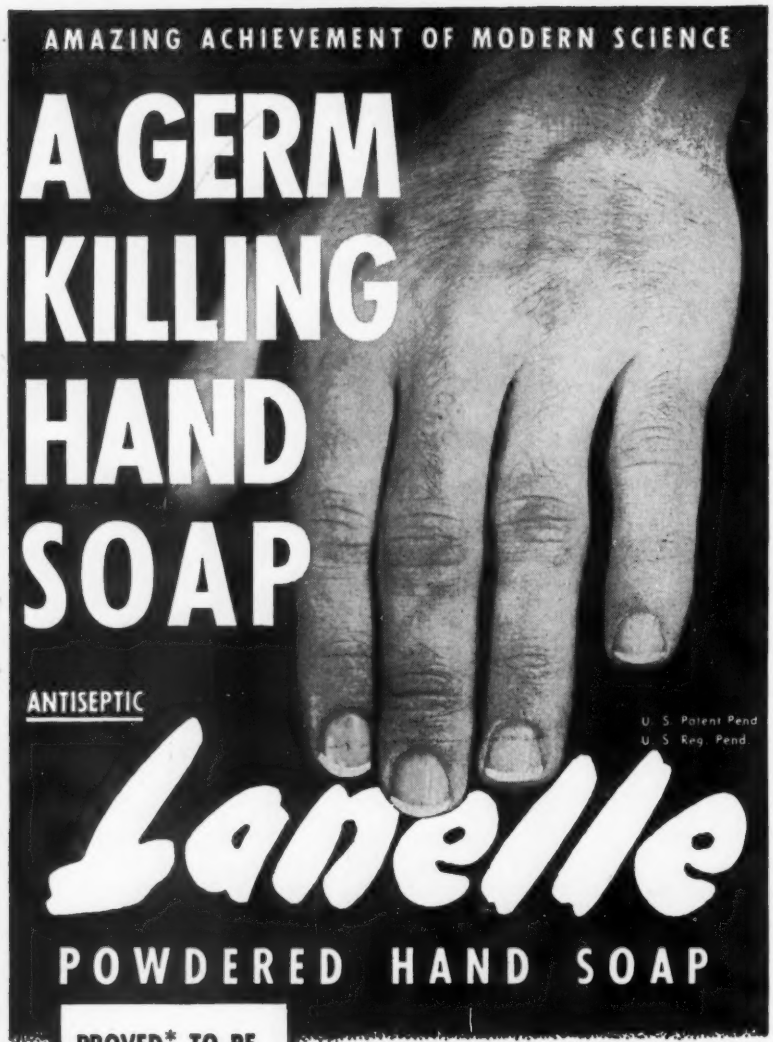
[4] Computed from all reports received for each month; not based on identical plants in successive months.

[5] Annual rates are based on substantially larger coverage than that of the quarterly survey and are, therefore, not strictly comparable with the monthly and quarterly rates.

[6] Not available.

AMAZING ACHIEVEMENT OF MODERN SCIENCE

A GERM KILLING HAND SOAP



ANTISEPTIC

U. S. Patent Pend.
U. S. Reg. Pend.

Lanelle

POWDERED HAND SOAP

PROVED* TO BE

GERM KILLING ON CONTACT

NON-POISONOUS

NON SKIN IRRITATING

PROTECTION AGAINST SKIN INFECTION

*by America's Largest Testing Laboratories and Industries.

Protect your plant personnel against skin infection and dermatitis with Antiseptic Lanelle, the world's most revolutionary germ killing, non-poisonous, non skin irritating hand soap. Antiseptic Lanelle kills germs on contact, yet it is non-poisonous!

Antiseptic Lanelle cleans hands safely, and has been test-proved by America's largest laboratories and industries.

Antiseptic Lanelle contains lanolin-Plus which helps soothe irritated, chapped skin. Lanolin-Plus offers unmatched skin conditioning action.

Antiseptic Lanelle removes stubborn grime, grease, paint, etc., leaves hands really clean, conditioned, protected! Yet it's mild and gentle as finest facial soap.

Write us today for full details concerning this important discovery. Learn how your plant personnel can enjoy maximum protection against disease and infection with Antiseptic Lanelle.

SANITARY SOAP COMPANY

Since 1921

104 RAILROAD AVENUE PATERSON 3, N. J

Working time lost during the quarter by these injured persons is estimated as about 2,212,000 man-days. At the current wage levels, this represents an estimated value of over 22 million dollars—a loss paid partly by employers in the form of workmen's compensation and partly absorbed by the injured workers in the form of reduced income during the periods of disability. This, however, is only a portion of the total cost which will accrue from the injuries. It includes no allowance for the continuing economic losses arising from the many deaths and permanent impairments, or for the hospital, medical, and other costs incidental to treatment of the injuries.

Of the 117 manufacturing classifications for which comparable data were available, 46 had significantly lower injury-frequency rates in the second quarter than in the first quarter of 1948. For 24 industries the rates were higher, and for 47 they were essentially unchanged. The outstanding reduction was in the rate for the integrated saw-and-planing-mill industry, which dropped from 60.3 in the first quarter to 41.3 in the second quarter. The rate for the battery industry decreased from 26.0 to 15.0, and for planing mills, from 51.3 to 42.5. In contrast, the rate for structural clay products rose from 14.0 to 23.2, and that for welded and heavy riveted wrought pipes, from 16.5 to 25.3. These and most of the other major changes in injury-frequency rates for individual industries represented a return to normal levels following unusual increases or decreases in the preceding quarter.

Sawmills had the highest injury rate (56.6) in the second quarter of 1948. Other injury rates above 40 were all in the woodworking group of industries: planing mills (42.5), the integrated saw-and-planing mills (41.3)—although these two industries had shown major decreases from the first-quarter rates—and the manufacture of wood containers (40.9).

The lowest rate, 2.5, was reported for the optical and ophthalmic goods industry. The synthetic-rubber industry had a rate of 2.7, synthetic-textile fibers, 2.8, and electric lamps (bulbs), 2.9.

Use Bound Postcard . . .

- **For New Product Information**
- **For Useful Literature**
- **For Advertiser's Booklets**

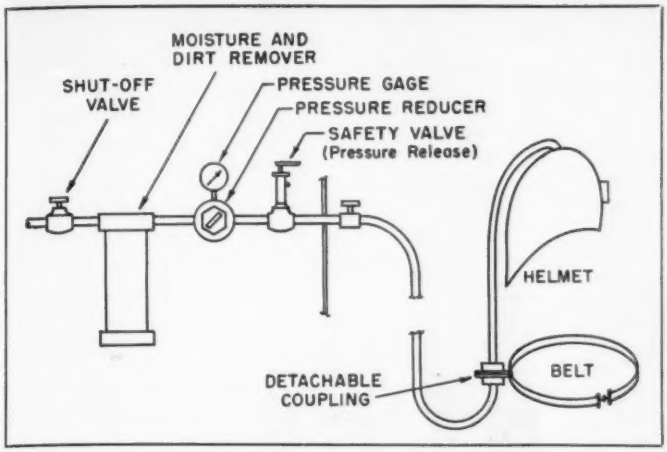


FIGURE 6

Suitable arrangement of air supply valves, pressure gauge, etc., for high pressure air. Independent low pressure air supply unit is, however, preferred (see text).

SAFETY IN SANDBLASTING

(Part III — Conclusion)

THE use of air from the compressed air line is fundamentally inferior to the use of special supply pumps. Compressed air may carry lubricating oil and water mists, and, sometimes, solid debris in the form of scale. Its temperature for process purposes is of little concern within wide limits, whereas for human comfort, temperature should be within narrow limits. To secure satisfactory air from compressed air lines requires the use of various devices, outlined in a later section, and superior maintenance attention.

Special Blower Units

In contrast with the casual arrangement of air supply from compressed air lines, the use of special blower units provides air free of oil, water and debris. The inlet can be located to supply air of good purity, and temperature variations are inherently low. There is no opportunity for accident by formation of carbon monoxide in the air pump. It is strongly recommended, therefore, that the helmet air supply be provided by a special blower unit, of a type not involving internal lubrication. This rules out reciprocating air compressors.

Compressed Air Supply

When air is supplied to the helmet from the compressed air line, an air cleaning device and pressure regulating valves are recommended as illustrated in Figure 6. The purposes of the several recommended parts are as follows:

(1) The shut-off valve is intended to be full-on or full-off. Obviously, however, it could be improperly adjusted by the worker to cut the air supply to a point below the required minimum of 4 or 6 cubic feet per minute. This should be checked as indicated under "Measuring Helmet Air Supply."

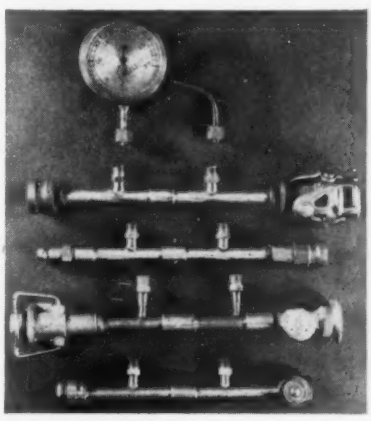


FIGURE 7

Air flow meters for a few of the approved-helmet-fittings for the insertion in the air line at the detachable coupling.

(2) The moisture and dirt remover is intended to remove lubricating oil mist, condensed moisture, solid debris and, in some units, odors resulting from the lubricant in the compressor. For the latter purpose it should include in addition to the filter, a mass of activated charcoal. It should be cleaned and recharged at suitable intervals determined by experience.

(3) A pressure reducing or regulating valve is included to adjust the pressure, so as to provide a flow at 6 cubic feet per minute or greater (4 cubic feet per minute for the Cesco and MSA). It is not intended that the adjustment be changed at the whim of the operator. In fact, its purpose would be better served if, after correct adjustment on installation, it could not thereafter be readjusted.

(4) The gage, located with no *adjustable* valve between it and the respirator, serves usefully to indicate the approximate magnitude of air flow (see section on "Measuring Helmet Air Supply," below).

(5) The pressure release, or safety valve, is specified in the Bureau

(Please turn to page 44)

WORKING at ANSUL is SAFER than STAYING HOME

JOE BANACH
Safety Director, Ansul Chemical Company
Marinette, Wisconsin

"OUR real product is happiness . . . the comfort and security of all of us who work here. That is the real reason we are in business."

Joe Banach

That's what H. V. Higley, our company president, told me 5 years ago when I came to Ansul Chemical Company to accept a newly created post as safety director.

"We have always strived to create an atmosphere of safety . . . a climate in which it becomes second nature for every individual to be careful . . . not only for his own welfare but to avoid doing anything that might be harmful to others," Mr. Higley continued.

"We are fortunate in that we are not a large company. We know each other well, have many personal friends among our fellow workers. We don't want anything to happen to them."

Management and Safety

Undoubtedly this kind of management thinking has more than a little responsible for the fact that despite the hazards of our work, we have had but four lost-time accidents (for a total of 66 days lost) since 1937.

Our business, which employs 322 workers in our chemical and fire extinguisher divisions, consists of the production, packaging, and shipping of liquified sulphur dioxide and methyl chloride, and the manufacture of portable dry-chemical fire extinguishers.

Perhaps the potential hazards of our business have been helpful in adding emphasis to the importance of safety among our workers. We begin at the beginning and work new men into our organization very slowly and carefully.

New employees are placed in a revolving yard maintenance crew. Their duties bring them in touch with every department of the business, allowing them to watch procedures and become acquainted with the safety precautions taken before they are placed in positions where they might have any major responsibility.

Safety by Degrees

As vacancies occur in various departments, these men are then taken into a department as third assistants. Again their responsibility is not great, but they are in closer touch with processes and have more chance for observation. By the time they are placed in responsible positions, they are well grounded in their duties, safe thinking and acting has become second nature, and superintendents know the kind of individuals they are and what to expect from them in emergency.

Records of the National Safety Council will show that a chemical plant constitutes a hazardous industry.

We are proud of the fact that by the application of safety teaching and practices, Ansul has been able to make its plant one of the safest. Prior to 1934, accidents occurred quite frequently. Today, company records show that since 1937 there have been only four. The longest period of operation during which no lost time mishaps were recorded was from July 1, 1944 to December 1, 1946, which produced a total of 1,032,091 man hours. In this 28 month period, only 58 minor injuries were reported, and the employees involved continued their work after receiving medical treatment.

An Award Each Year

Since 1937, Ansul has never failed to receive an award each year from the National Safety Council and Employers Mutuals of Wausau, our insurance carrier, in recognition of its no lost-time accident record and low-accident frequency rate. These plaques are mounted in a conspicuous place in our lunchroom as a reminder of past achievements and to stimulate desire for new safety awards.

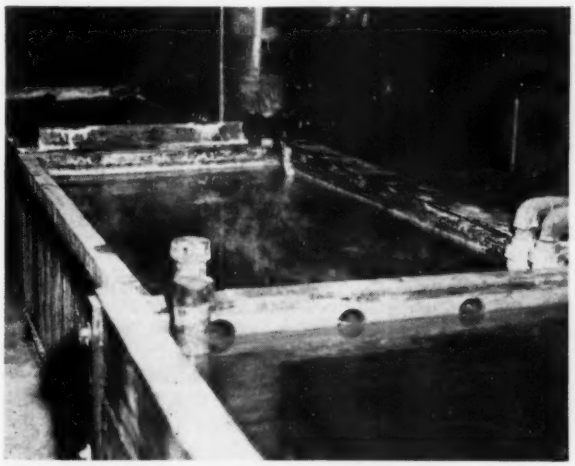
With President Higley and other company executives taking the stand for safety to which I called attention at the opening of this article, our safety program is anchored on the firm foundation of the utmost management co-operation. They never have to be sold on the value of safety. When a project is presented that will make our plant a safer place to work, the cost is not the important thing with them. In our plating room, for instance, careful planning to prevent accidental exposures to chromic acid, hydrogen cyanide, and acid vapors were protected by a system designed by our insurance carrier's ventilating engineer. Such a system was installed at a cost commensurate with adequate control. A less complete approach to the problem to save expense is too frequently tolerated.

Bad accidents are usually the result of factors which must be run down and corrected if other similar accidents are not to follow. *Engineers from our insurance carrier have given us the utmost cooperation in discovering possible accident causes and showing us how they may be corrected . . . before an accident occurs. One of their engineers attends many of our safety meetings, shows safety films on subjects pertinent to our type*

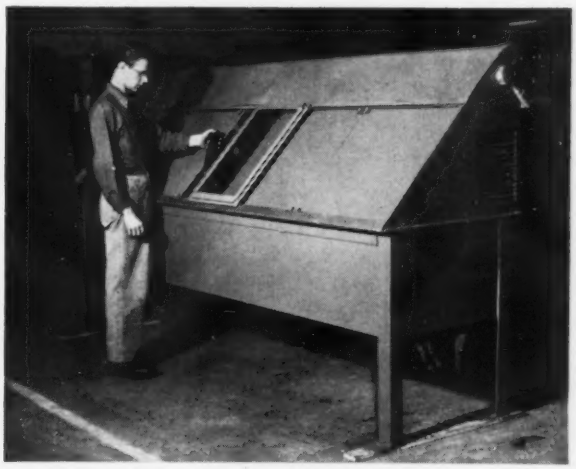
(Please turn to page 47)

This is a batching operation where chemical is weighed in container before filling fire extinguisher. Hooded back keeps dust in position to be sucked into overhead exhaust.

Safety shower provided in Ansul test laboratory to dilute and wash away all caustics and acids. It is always ready to furnish quick protection, particularly of the face and eyes.



Cyanide fumes and hydrogen vapors from these electroplating containers are exhausted through slot at right of tank which protects the worker by providing 110 to 120 cubic feet of displacement per square foot of exposed surface.



Shatterproof glass allows observation of carbonic testing tank. These cylinders are sealed and immersed in water to detect leaks. A small glass over the cylinder and sliding glass cover allows worker to make inspection safely.

A group of employees being instructed by Mr. Shingledecker (in coveralls) in the proper use of fire fighting equipment. This brigade member is using a CO_2 extinguisher on gasoline fire.

ORGANIZING FIRE BRIGADES

by
J. W. HUNTINGTON, Mgr., The Mill Mutuals, Ohio Dept.
and
L. E. SHINGLEDECKER, Director of Fire Safety

THE constantly mounting fire loss has been of deep concern to those of us in the fire insurance business for many years. However, the concern seemed to be largely limited to us. The general public was apathetic.

It took the war to make the realization of this awful waste more general.

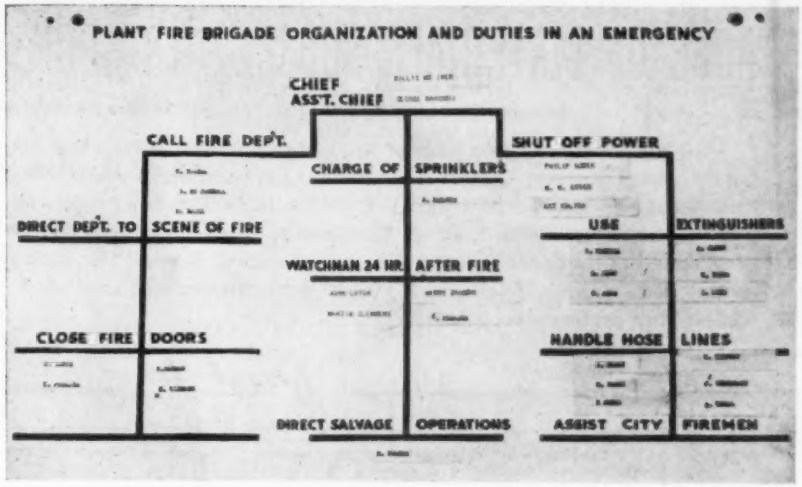
Regular firemen were not exempt from the draft, and as the ranks were depleted City Officials, particularly fire chiefs, began to exhibit genuine alarm. Both branches of the service were extremely fire conscious and their fire departments were well trained and manned. By whom? By draftees who had been firemen. A grand job was done by them not only in protection of Government property, but in training their personnel. But what to do on the home front? Industry was teeming—every fire loss was a victory for the enemy. What to do?

Industrial Fire Brigades have been in existence for many years, but except in the huge plants had little recognition. Eyes turned to that source of protection. Perhaps that was the answer. Our own observations are, perforce, local, but practically simultaneously, Springfield, Dayton, Columbus, Hamilton and many other cities in Ohio began to encourage the organization and expansion of plant fire brigades. Here in Columbus, Ohio by the end of 1942, we had 40 odd plants organized and trained. There was *not one major fire* in a plant with a *brigade* during the war! Well—anything that good deserves recognition and preservation.

Of course, a lot of ground was lost immediately following the end of the war. Safety rules of all kinds were relaxed or ignored entirely with the result that at the end of 1948 the national fire loss for the year was more than 711,500,000 dollars! Each month was worse than the preceding one. Some people are shocked at the cost of the current air-lift to Berlin. We can't help that—but we can help control the fire loss.

The Mill Mutuals is a group of Mutual Fire Insurance Companies writing a large volume of business consisting in part of flour and feed mills and grain elevators. With the price of grain at unprecedented highs, we were faced with the prospect of heavy losses and the prospects were materializing too rapidly to be pleasant.

Here in Ohio we decided to try to organize and train fire brigades in mills and elevators. For two years we fooled around with the problem and were finally forced to admit our own inspectors had neither the time nor



This is a picture of the fire brigade organizational chart. It is used by all plants in the program and is posted for permanent reference in a conspicuous place.

the training to do a satisfactory job.

I had met a Mr. L. E. Shingledecker, Safety Director for the National Supply Company of Springfield, Ohio, many times in the course of Fire Prevention activities, and was familiar with his interest and ability in training Fire Brigades. In due time, he accepted a position with us and was given a free rein to organize brigades in 25 of our largest plants in Ohio and West Virginia.

At this writing some 15 months later, 70 brigades have been trained and are in operation. More than 2,800 employees have had this training. It is my considered opinion that the Industrial Fire Brigade is the one medium of education of employees which will *successfully* defeat fires.

The reception given our plan by both management and labor has been as surprising as it has been gratifying. In only one instance was management (and that was not at the top) hesitant. The reason given was that the Union "would not stand for it." As a matter of fact the Union Members have entered into the spirit of this experiment wholeheartedly in all cases and we know improved labor management relations have resulted.

Quite a lot of preparation in our office was necessary before we made our first contacts. The most tedious was the preparation of a mimeographed "Fire Brigade Manual", of some 40 pages. When we felt we were ready, we sent Mr. Shingledecker out to explain our plan. We needed so many men for each brigade, according to the size of the plant, number of shifts, etc. We needed managements "OK" for the time necessary to train the members. These men would have to have a minimum of 4 hours instruction before being qualified to serve as a member of the brigade. Instruction by Mr. Shingledecker is given on company time too. The course varies according to the first aid protection in the plant. If there are automatic sprinklers standpipe and hose, in addition to extinguishers and water barrels, the course is more comprehensive.

(Mr. Shingledecker here narrates how he organizes fire brigades).

"In setting up this program I actually follow 5 steps in formulating our procedure. They are as follows:

1—Contact Call.
2—First Organization Meeting.
3—Second Organization Meeting.
4—Third Organization Meeting.
5—Checking Back on Program as a Whole.

I will elaborate on each step and try to give you a

(Please turn to bottom of next page)

(Please send ONE copy to The Mill Mutuals, 311 E. Gay St., Columbus 15, Ohio)

WEEKLY INSPECTION REPORT—GRADING BLANK

Company Name_____ Location_____

FIRE PROTECTION EQUIPMENT:

1. First Aid Equipment
   A—Extinguishers—Clean and in workable condition ____ Yes____ No____
   B—Water Barrels and Buckets—
   (a) Is there at least one water barrel on each floor and section of plant ____ Yes____ No____
   (b) Two good buckets with each barrel ____ Yes____ No____
   (c) All water barrels and pump type extinguishers full of water (in winter time they should also be treated with non-freeze solution) ____ Yes____ No____
   (d) Are tops of barrels free from bags and trash ____ Yes____ No____
2. Standpipe and Hose—Accessible on all floors and basement ____ Yes____ No____
3. Sprinkler Protection
   A—Valves Open ____ Yes____ No____
   B—Heads—At least 18" clear space to all stock ____ Yes____ No____
4. Fire Prevention Signs—(a) "No Smoking" signs posted ____ Yes____ No____
   (b) "In Case of Fire Call" signs posted ____ Yes____ No____
   (c) "Arson Reward" signs posted ____ Yes____ No____
5. All Fire Doors clear and in workable condition ____ Yes____ No____
   (a) Number blocked open____ (b) Number out of order____
6. Are you personally familiar with the proper and quickest method of calling the Fire Department ____ Yes____ No____

HOUSEKEEPING:

1. Outside—(a) Are premises close to buildings free of weeds (at least 10 ft.) ____ Yes____ No____
   (b) Are car doors and other combustible materials piled closer than 10 ft. to your buildings ____ Yes____ No____
2. Inside—Floors free from litter and excess dust ____ Yes____ No____
3. Motors and switch' boxes—free from excess dirt ____ Yes____ No____

MAINTENANCE:

1. Any broken windows or other openings where sparks could enter ____ Yes____ No____
2. Bearings—(a) Clean and well oiled ____ Yes____ No____
   (b) Are any running hot ____ Yes____ No____
   (c) Any need rebabbitting ____ Yes____ No____
3. Motors—Any fuses bridged or relays wired ____ Yes____ No____
4. Lighting Circuits—Are all fuses for 110 volt systems 15 amp. or 10 amp. for 220 volt systems ____ Yes____ No____
5. Portable Lights
   (a) All equipped with dust tight globes and fixtures ____ Yes____ No____
   (b) Are all cords of heavy rubber type and in good condition ____ Yes____ No____
6. Magnetic Separators clean and operating properly ____ Yes____ No____

SMOKING:

1. Is the "No Smoking Rule" strictly enforced ____ Yes____ No____
2. Any cigarette or cigar butts or matches found indicating violation of "No Smoking Rule" ____ Yes____ No____

MISCELLANEOUS:

1. Storage Space
   (a) Bagged and bulk feed checked for heating ____ Yes____ No____
   (b) Has any feed been piled or stored more than 60 days without moving or turning ____ Yes____ No____
   (c) Is bagged stock stacked on skids ____ Yes____ No____
   (d) Is bagged stock piled higher than 6 ft. without scantlings ____ Yes____ No____
   (e) Any rows longer than 16 ft. without a break for aisleway ____ Yes____ No____
   (f) Exits available and clear ____ Yes____ No____

Please use other side for any remarks you care to make.

INSPECTED BY _____ DATE _____

M-748 7M'49

Weekly Inspection Report used by all companies participating in Mill Mutuals industrial fire brigade training program. See contents of article for information on how this report is used.

TABLE OF MATERIALS SUBJECT TO SPONTANEOUS HEATING

Prepared by N.F.P.A. Committee on Spontaneous Heating and Ignition

The following table lists some of the more common materials that are subject to spontaneous heating in varying degrees. The list is not intended to be entirely comprehensive and the omission of any material or combination of materials from the table does not necessarily indicate that these may not be subject to spontaneous heating. The table is based on ordinary atmospheric conditions that may be encountered in transportation and storage; it does not purport to include unusual materials under special conditions where abnormally high temperatures, etc., may exist. Such cases are beyond the scope of this present compilation.

Part 4

Name	Tendency to Spontaneous Heating	Usual Shipping Container or Method of Storage	Precautions Against Spontaneous Heating	Remarks
Sawdust	Possible	Bulk	Avoid contact with drying oils.	Partially burned or charred sawdust may be dangerous.
Scrap Film	Very slight	Drums and Lined Boxes	Film must be properly stabilized against decomposition.	Nitrocellulose film ignites at low temperature. External ignition more likely than spontaneous heating. Avoid exposure to sparks, etc.
Scrap Leather	Very slight	Bales, Bulk	Avoid contamination with drying oils.	Oil treated leather scraps may heat.
Scrap Rubber or Buffings	Moderate	Bulk, Drums	Buffings of high rubber content should be shipped and stored in tight containers.	Sheets, slabs, etc., are comparatively safe unless loaded or stored before cooling thoroughly.
Sisal	Very slight	Bulk, Bales	Avoid hot, humid storage.	Partially burned or charred material is particularly liable to ignite spontaneously.
Soap Powder	Moderate	Drums, Barrels, Boxes	Inhibit efficiently.	Uninhibited powders occasionally cause fires.
Soy Bean Oil	Moderate	Tin Cans, Barrels, Tank Cars	Avoid contact with rags, cotton or fibrous materials.	Impregnated fibrous materials may heat unless well ventilated.
Sperm Oil—See Tung Oil Whale Oil	Moderate	Tin Cans, Barrels, Tank Cars	Avoid contact of leakage from containers with rags, cotton or other fibrous combustible materials.	Impregnated fibrous materials may heat unless ventilated. Tendency varies with origin of oil.
Waste Paper	Variable	Bulk	Avoid extremes of moisture contents. Avoid loading or storing while hot.	Wet paper occasionally heats in storage in warm locations.
Whale Oil	Low	Tin, Glass, Barrels	Avoid contact of leakage from containers with rags, cotton or other fibrous combustible materials.	Very dry or moist tankages often heat. Tendency more pronounced if loaded or stored before cooling.
Wool Wastes	High	Bulk, Bales, etc.	Process carefully. Keep cool and ventilated.	Most wool wastes contain oil, etc., from the weaving and spinning and are liable to heat in storage. Wet wool wastes are very liable to spontaneous heating and possible ignition.
Varnished Fabrics	Moderate	Boxes	Keep dry and ventilated.	Thoroughly dried varnished fabrics are comparatively safe.
Tankage	Moderate	Bales	Avoid contact of leakage from containers with rags, cotton or other fibrous combustible materials.	Has some tendency to heat but less so than the drying oils. Chemically active with chlorine compounds and may cause fire.
Turpentine	Moderate	Barrels and Tank Cars	Keep cool and ventilated or store in closed containers. Avoid high moisture.	Impregnated fibrous materials may heat unless ventilated. Tendency varies with origin of oil

picture of the actual functioning and importance of each step.

Contact Call

"I make it a point to call on the owner or manager of the plant, make myself known, explain to him my position with The Mill Mutuals, outline the program to him, and emphasize the importance of his personal backing of the program when started.

I then have him set a date on which I return and conduct a meeting which is known as the first organization meeting.

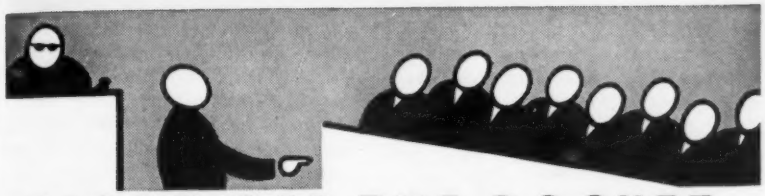
I contact the City Fire Chief and acquaint him with the program that The Mill Mutuals is sponsoring throughout the state of Ohio. I explain the procedure to be followed with the plant in his town and ask him for advice concerning same. He is invited as a representative of the fire department to attend at least one of our meetings. I make sure he realizes we intend to work with him.

First Organization Meeting

"The purpose of this meeting is to explain and show the employees the reason for each request made by us while conducting the program. Next I outline the assignments we feel they should have to carry out in case of fire and the reason for each such as:

1—Turning in city fire alarm or calling nearest fire department.
2—Turning in the plant alarm.
3—Directing the city firemen to the location of the fire.
4—Shutting off all machinery.
5—Closing all fire doors or doors in the vicinity of fire.
6—Having someone responsible for

(Please turn to page 32)



RIGHT OFF THE DOCKET

Suffers Heart Attack While Playing Ball On Company Team

Decedent was employed by the Crosley Corporation as a guard. The company had adapted a recreation program for its employees in which provision was made for the playing of baseball games. Playing equipment was furnished by the company and the program was directed by a paid supervisor who made arrangements for the forming of several teams of corporation employees, made the schedule of games and selected sites for playing. The players wore shirts prominently displaying the name of the corporation or enough thereof to identify them as Crosley employees.

The decedent sought to join one of the regular teams, but was dissuaded from doing so because he was older than the players composing the teams and also because his work as a guard interferred with the time schedule of the games. The decedent then formed a team of "Crosley guards", and was so designated upon the shirts worn by the players in his team. This was sufficient to identify the players as employees of the corporation and spectators at the games knew that the players were all Crosley employees.

The "Crosley guards" were not entered in the main schedule of teams, and were not a part of the regular league of Crosley teams. *However, they were furnished playing equipment by the corporation.* The last game was played upon the grounds of the Cincinnati work house and the decedent made the arrangements for use of the playing field.

The "Crosley guards" and the opposing team posted the sum of $20.00, the total deposit paid to the winning team. The losing team would pay for refreshments for both teams. The teams in the regular Crosley league put up no forfeit, and played solely for a trophy awarded the winning team at the close of the schedule.

The deceased was running bases when he was tagged out. He walked to the players' bench. Immediately thereafter, and upon being seated he fell dead. Cause of death was acute cardiac dilation, secondary to chronic endocarditis.

Did death arise out of and in the course of employment? Court concluded that the death from heart attack suffered during baseball game played by team sponsored by employer that furnished equipment and uniforms bearing its name was compensable as result of injury "arising out of and in the course of employment", notwithstanding the fact that the team was not entered in main schedule and not part of employer's regular league, on the theory that if a player in any of the teams composing such league could be brought within the application of the law applicable to workmen's compensation, then the decedent was also subject to such application. The difference between the status of the Crosley guards and any team in the regular league was one of degree only and not principal. Both employee and employers received consideration from this recreational activity which was the direct outgrowth of a program which was not only authorized by the corporation but definitely sponsored by it and the equipment furnished by the means of the corporation. There was sufficient relationship at the time of his death to his employment to justify the conclusion that the claimant is entitled to compensation.

Ott -vs- Industrial Commission, Ct. of Appeals of Ohio, Hamilton County, July 6, 1948 82 N. E. Second, Page 137.

Vaccination Program Sponsored by Company

CLAIMANT was employed at department store owned by the company in Asbury Park. The company's personnel director after a meeting of representatives of other employers in the area, had proposed to its store manager that a vaccination service be made available to its employees to guard against a smallpox epidemic which had been threatened by several cases in New York City.

The proposal was adopted and vaccine was purchased through the local Health Department and a notice was distributed to the company employees stating that, "On April 22, 1947, we will provide free innoculation to all those who choose to be immunized against smallpox. We are sure that everyone is aware of the current spread of smallpox and we strongly urge that you take advantage of this service, which we are glad to provide in the interest of your health".

Pursuant to this notice most of the employees, including the claimant, were vaccinated.

The claimant suffered a reaction which resulted in both temporary and partial permanent disability. The personnel director testified that it was his responsibility to improve the employer-employee relationship, to promote morale and to create a happier environment for the employees. He acknowledged that although his activities pointed to additional employee privileges, they were designed for and resulted in mutual benefits to employer and employee. A cafeteria where food was served to employees at reduced prices and a medical clinic where they may receive treatment for incidental non-industrial ailments as well as industrial accidents were provided.

He further acknowledged that absenteeism disrupts orderly business and that it was in the employer's interest that measures be taken to reduce absences, but stated that the vaccination program resulted in an expected rise in absenteeism, presumably of short duration. He stressed that the vaccination was not compulsory and pointed out that to emphasize its voluntary nature, the employees were required to certify that the company would not be responsible for the results.

The vaccination service furnished by the employer and on his premises was construed to be a mutually beneficial factor and that so far as it aided in the prevention of smallpox within the employee group in protecting the employer against possibly disastrous business consequences.

It would be unrealistic to find that the service was for the exclusive benefit of the employees and was

not designed to further a sound employer-employee relationship and safeguard the employer against the serious effects of a case of smallpox amongst its employees. The risk was reasonably incident to the employment and the claimant's injuries resulted from an untoward event or accident arising out of and in the course of her employment within the broad and remedial intendment of the Workmen's Compensation Act.

The fact that the employees certified that the employer would not be responsible for the results of the vaccination, did not remove or narrow the employer's liability under the Act.

Saintsing -vs- Steinbach, Superior Court of N. J., Appellate Div., Part A, 64 Atlantic Reporter, Second Series, Page 99

Shot By Watchman

CLAIM is brought to seek recovery for the death of Julius Cyprian, who was killed while in the employ of the company. It appears that while Grote, a night watchman of the Jahncke Company, was making his rounds he had locked the gate so that no one could come in the premises, the watchman being under the impression that no one had any right to be on the premises, where he found Cyprian at the time, on his hands and knees, trying to get up in the yard.

He asked Cyprian how he had entered the yard and the answer received was "to Hell with you". The watchman contended that Cyprian was drunk and began to curse and abuse him as the result of which the watchman pulled out his revolver and ordered him off the premises. Cyprian then said that if he would find a stick or something that he would knock the watchman's head off. He didn't find the stick and decided to take the watchman's revolver from his person and as he approached, Grote the watchman, pulled the trigger and it snapped. The watchman told Cyprian to come no further. However, he advanced his steps and at that time he came within four feet of the watchman, who pulled the trigger.

There was some proof to indicate that Cyprian although in the condition found, did have a key giving him the right to be on the premises. However, this fact was of little importance and the question of intoxication or permission to be on the premises had no bearing upon the right of recovery by reason of the fact that he was the aggressor under the circumstances.

The claimant in seeking recovery cited a Supreme Court ruling allowing a recovery for injuries sustained by a foreman notwithstanding the fact that he was the aggressor.

The case is distinguishable from the present situation as it can be concluded that if a foreman, in attempting to enforce company rules or regulations or to carry out company business, sustained injury and even though in a controversy, he happens to strike the first blow, it can be properly stated that he was merely attempting to do his duty when by chance he found it necessary to strike the first blow. The rule does not work the other way around.

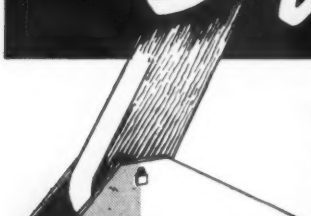
If a subordinate employee gets into a controversy over company business and initiates an attack upon a foreman or supervisor, it cannot be said that because the dispute grows out of company business, there can be no recovery regardless of the fact that the employee was the assaultor.

Claim denied.

Willims -vs- Jahncke Service, Inc., Court of Appeals of Louisiana, Orleans, January 10, 1948, 38 Southern Reporter, Second Series, Page 400

You Know You're SAFE When You Use

Safe-Hi PRODUCTS



SAFE-HI Ladder Shoes

. . . hold securely on any surface . . . wet, dry, soapy, oily or covered with snow or ice . . . **because** they give you this essential combination of Cord, Rubber and Ridges in the Tread . . . and a Self-sharpening Spike.

SAFE-HI Ladder Shoes

Approved by Underwriters' Laboratories.

Made in 2 widths, for straight ladders and step-ladders. Stepladder model includes extra treads for brace legs. Holds all legs securely. Prevents "creep" or shaking user off balance; makes step-ladder safe when folded and used against wall.

Non-Spark Ladder Shoes: Completely non-ferrous. Vital where sparks are a hazard. Made in both step and straight ladder models.

Spike Locks: Automatically lock shoes in spike position.

Pole Grips: Hold top of ladder securely on pole, pipe or corner.

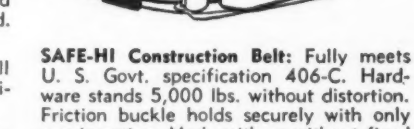
Wall Grips: Hold top of ladder. Prevent side slip on smooth wall.

SAFE-HI Safety Belts

Engineered for maximum safety. Proved by new "Safti-graph" Test Method. Write for full information .

Window Cleaners' Belt, bolt type: Will stop maximum fall safely, with minimum shock load on building anchor.

Window Cleaners' Belt, stirrup type: For use on buildings not equipped with anchors or bolts.



SAFE-HI Construction Belt: Fully meets U. S. Govt. specification 406-C. Hardware stands 5,000 lbs. without distortion. Friction buckle holds securely with only **one** insertion. Made with or without fixed shoulder harness, or with detachable shoulder harness.

SAFE-HI Shock Absorber for Safety Belts: Insures a gradual friction stop without jolt or rebound. Makes high work safe; falls harmless. Meets U. S. Govt. specification 419 fully.

Safe-Hi PRODUCTS

Ask your safety dealer or write us for descriptive literature.

Rose Manufacturing Co.
1731 Arapahoe St., Denver 2, Colo.

Inability To Continue Employment Due to Effect On Nervous Condition

LALA was employed as a sugar dryer at the company plant operating centrifugal machines. On March 28, 1947, he slipped on a circular stairway in the plant and fell about 2½ stories and approximately 60 feet, his head and face striking an iron post during his descent.

He was given surgical treatment to repair various facial injuries. Claimant contended that he was totally and permanently disabled and that he suffers a traumatic neurosis and is nervous, neurotic and emotionally upset, and extremely sensitive to noise; that he continues to suffer periodic and severe headaches and pains; that he cannot rest or sleep; all of which inhibits him from doing the same character of work that he performed for the company or any other kind of work about machinery or where there is noise.

Although there was some conflict in the medical testimony as to his condition, all of the experts arrived at the conclusion that the claimant was neurotic as the result of the accident occurring. There was sufficient evidence of his nervous and fidgety condition by the fact that he had to resort to the use of sedatives and other medicines and that he had frequent nightmares, beads of perspiration stood out around his mouth and on his forehead; his sleeping garments became wet with perspiration; he was unable to have normal sexual relationship with his wife; that prior to the accident this disability had not existed. The claimant was 28 years of age at the time of the accident and medical testimony revealed that this condition manifesting itself at that age, would tend to confirm the presence of a traumatic neurosis.

Company contends that the claimant's condition does not prevent him from returning to work and that his disability is not compensable under the Workmen's Compensation Act and that the disability, if any, is merely partial and not permanent.

Nervousness, neurosis, or emotional disturbances, superinduced by injuries suffered by a workman can be just as devastating to the ability to return to work as are physical or anatomical injuries, and are equally as compensable under the statute.

There was no question that from the evidence revealed that the claimant was unable to continue to work in an atmosphere where there was considerable noise and confusion, as his presence therein is unbearable and has a tendency to increase his nervousness.

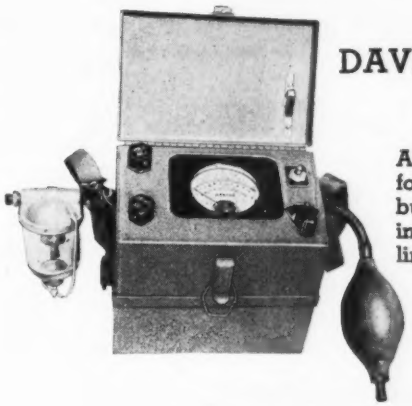
The claimant is presently employed in a clerical capacity and earns a higher wage than he received from his former employer. This, however, is not the determining factor in the case because the words "producing permanent, total disability to do work of any reasonable character" under the employer's liability act is interpreted to mean such work of the same or similar nature that the claimant was performing at the time of his injury.

The workman was, therefore, unable by reason of his injuries to return to occupation in which he was engaged when injured and is entitled to payment of compensation for total and permanent disability although he engages himself in other pursuits or employment which are less onerous.

Lala -vs- American Sugar Refining Company, January 24, 1949, Court of Appeals of Louisiana. 38 Southern Reporter, Second Series, Page 415

DETECT and ANALYZE Most Toxic Gases

—with the DAVIS VAPOTESTER MODEL 6
and the DAVIS MICRO-GAS ANALYZER
—most complete gas analysis equipment in the toxic range.



DAVIS VAPOTESTER MODEL 6

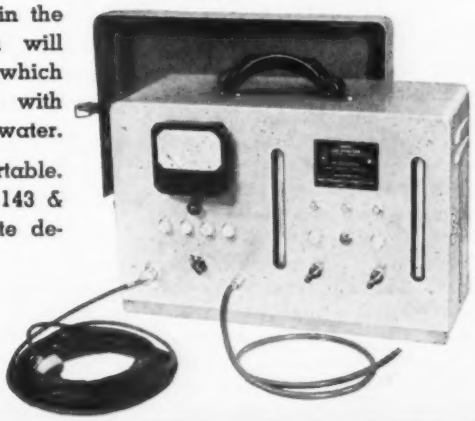
A two range instrument for the detection of combustible gases or vapors in terms of lower explosive limit and toxicity.

- In the toxic range
- In the combustible range

DAVIS MICRO-GAS ANALYZER

Analyzes any gas in the toxic range which will ionize in water or which when decomposed with heat will ionize in water.

Both units are portable. Send for Bulletins 1143 & 1144 giving complete details.



SAFETY DAVIS DIVISION

DAVIS EMERGENCY EQUIPMENT CO., INC.
59 Halleck Street, Newark 4, N. J.

From Page 28

the supervision of automatic sprinklers.

7—Watchman responsible for checking the vicinity of the fire for 24 hours after it has been extinquished.

"I then outline to them the requirements of our "One Hour A Month Club" and how to become a member. They are as follows:

1—Be fire-prevention and safety-minded at all times.

2—Have designated interested employees as members of a fire brigade.

3—Permit the designated men to be trained in fire fighting methods and prevention work.

4—Pledge that after employees have received training they will be permitted to continue this training at least one hour each month.

5—Promote a self-inspection program within own organization.

6—Pledge that Company will promote meetings or programs twice a year to keep up the interest of brigade members.

"I then review the weekly inspection blank that they will be using for the next few months and I point out the reason for each requirement to be checked on this blank. (See reproduced on page 27.)

"I then outline the principle of fire extinguishment and the 8 different types of extinguisher that are on the market for their use. (See chart this page.)

"I then close the meeting with a question and answer period as they so desire. I have found in almost all cases that they do want a question and answer period.

"Before our first meeting I make it a point to make an inspection of the plant, after which suggestions are made to the manager on his housekeeping, location and type of first aid equipment and on any other things which might come to my attention during the inspection.

Second Organization Meeting

"At this time I take the employees out doors, build small fires, and permit them to use all types of extinguishers and let them view the reaction of each while extinguishing the fires. I then make an inspection of the plant, discuss with the manager the improvements or failures of complying with things mentioned in our previous discussion.

Third Organization Meeting

"I call at the plant and with the man that has been assigned to head up the program at each plant, we assign the different employees duties they are to carry out in case of fire. We make up an assignment chart at this meeting and hang it on the wall in a conspicuous place. Next we present the employees with a card, this having their assignment written on it and being a form of a membership card.

I leave a copy of our Fire Brigade Training and Reference Manual with the Brigade Plant Chief and he is to use this in carrying on the program.

Type	*For Class Fire*		
1—Plain water	A	Coolers:	Principal action is to cool the material below the ignition point.
2—Anti-Freeze	A		
3—Soda Acid	A		
4—Foam Solution	A B	Smotherers:	Principal action is to exclude the oxygen.
5—Vaporizing liquid	B C		
6—Inert gas CO_2	B C		
7—Loaded Stream	A B	Combination:	Cooling, smothering and fire-proofing.
8—Dry Chemical	B C		

Last Call

"On my last call I work with the plant brigade chief and we make an inspection together. I try to outline to him the importance of his following through on all phases of our program. The Plant Brigade Chief is informed of his responsibility for seeing that the self-inspection program is carried out and the monthly assignments complied with as requested by our office.

General

Monthly Assignments for 1949 are:

January
  Fire Drill

February
  Manual on Extinguishers (to be reviewed by all members)

March
  Questionnaire (a test) for all Brigade Members on proper extinguishers to use on various type fires, etc.

April
  Fire Drill

May
  Visit of City Fire Chief (Inspection)

June
  Combined Meeting (All Brigades in the State)

July
  Fire Drill

August
  Outside Use of Extinguishers

September
  Evening Meeting

October
  Fire Drill

November
  Sectional Meetings (Ohio divided into 3 territories)

December
  Brigade Chief Check Organization

"The Fire Brigade Chief reports to our office after the completion of each assignment in various ways depending on the type assignment. Our office also prods along those organizations who tend to forget their assignments by sending reminder cards, or personal letters if necessary.

"I try to call on all plants at least once every three months. I help them conduct at least one night meeting and show the pictures 'Chemistry of Fire' and 'How Fires Start In Industry'. Both are sound movies, 16 MM.

"Our Brigade Chief receives a continuous flow of material to be used in keeping up the interest in the program in his plant."

Mr. Huntington has announced that Mill Mutuals is going to reward outstanding effort by an annual presentation of a plaque to that brigade which in our judgment has done a fine job. That does not necessarily mean the extinguishment of a fire—it can be in training, organization or cooperation.

The 1948 award was made to The Northwestern Elevator and Mill Company, Mt. Vernon, Ohio. In February, 1948, fire was discovered by an employee reporting for work on the 10 p.m. shift. Both Brigades went into action with the result this 100 year old frame mill was saved. Fire loss — $1,500.00. Possible fire loss—$600,000.00! It took courage as well as know-how! Those boys had both.

Our feeling on fire brigades is that such training is the only media of getting the message over to the employee who, after all, is the man on the firing line. The boss or the safety director can get excellent literature by the ton, but unless the man in the plant gets the message, not much is accomplished.

Yes, we of The Mill Mutuals—Ohio Department—are firmly convinced that well trained Fire Brigades are the "missing link" in fire safety.

TECHNICAL FILE ON TOXIC GASES AND VAPORS

SAVE THIS VALUABLE REFERENCE MATERIAL: BUILD UP A PERMANENT OFFICE FILE

D 78. CHLORINE. Chlorine is a greenish-yellow gas, which, as a member of the halogen series, is catalogued, like sulphur dioxide, as an irritant of the upper respirator tract and also toxic to deeper tissues. In the sunlight, chlorine combines with hydrogen to form hydrochloric acid, already cited in this section. It is soluble in water and alkalis and is a heavy gas, having a relative density to air of 2.491. These properties, together with chlorine's choking, irritating effect on respiration, caused its use as a combat substance in chemical warfare.

D 79. INDUSTRIAL USES. In industry, it is produced mainly from common salt (sodium chloride) by electrolytic methods. Chlorine is used principally as a water-purifying disinfectant and as a bleaching agent in the textile, laundry, sugar, flour and paper industries. It is widely used to produce chloride of lime (bleacher), in chlorinating hydrocarbons, to produce carbon tetrachloride, chloroform, methyl and ethyl chlorides and trichlorethylene, in chlorinating naphthalenes and diphenyls.

D 80. PRESENCE OF HAZARD. Hazards may be present wherever chlorine is manufactured, handled or used, especially in the chemical industries. It is necessary in metallurgy and in the manufacture of dyes, inks, tear gas, rubber, drugs, alkali and metallic salts, bromine, iodine, soda and phosgene.

D 81. EFFECTS OF EXPOSURE. Chlorine again is one of those gases so irritating in nature that an exposed worker is compelled to seek fresh air or better ventilation before serious injury results. Bromine and iodine are similar to chlorine in most respects.

The principal irritation is to the eyes, skin and air passages, as can be expected from this group of gas irritants. Common signs are cough, pallor, digestive disturbances, lung congestion and a subsequent pale green color of the skin.

D 82. ACUTE EXPOSURE. If a worker is overcome by a huge dose of the gas, as is possible infrequently in exposures to leaky or broken containers, etc., the reaction causes painful, shortened breath, a burning deep in the chest, coma and quick death unless the victim is removed immediately to fresh air.

D 83. FIRST AID. First aid must be prompt in such cases and a physician is urgently needed as it may be necessary to draw blood immediately and to thin it out. Oxygen should be administered in *all* cases and continued if pneumonia should develop. The victim must be kept warm and at rest, as heart disorders are possible. For this very reason drugs to soothe are rarely given. Secondary infections of damaged lungs develop often so the victim must be under constant care until fully recovered. Olive oil can be used on the eyes, but oil sprays of the air passages should be avoided as a possible producer of pneumonia. If a victim of acute poisoning survives the first twenty-four hours, he probably will recover completely, although reports are current of secondary infections (even gangrene) of the lungs.

D 84. PROLONGED EXPOSURES. Chlorine solutions are typically corrosive to the skin and prolonged contact causes an acne-type dermatitis or other skin irritations. Small amounts of chlorine breathed over a long period can cause tooth decay, chronic bronchitis, loss of smell, taste, appetite and weight, headache, dizziness, insomnia and heart disturbances. Continued exposure of the skin to small amounts of the gas also can cause a dermatitis. The U. S. Public Health Service has suggested a safe limit for chlorine of 0.35 parts per million of air for a work shift period.

D 85. CONTROL AND PREVENTION. Industry should take no chances with chlorine. Processes should be covered or exhausted properly. Containers should be handled and stored carefully. First aid and medical service should be on quick call at all times. Warning posters and educational programs can serve as constant reminders to the workers of the dangers of exposure. Inspection and testing of work rooms and equipment, if done regularly and conscientiously, will help to minimize this hazard. Remember, this gas can be seen and smelled, which simplifies the problem of control tremendously.

D 86. ACROLEIN. Acrolein, also called acryl-aldehyde, acrylic-aldehyde and propenal, is a slightly yellow liquid giving off a colorless, irritating, pungent vapor. The vapor or gas is heavier than air, having a relative density of 1.9 Acrolein is soluble in water, alcohol and ether.

D 87. WHERE FOUND. It is formed usually when fats (or waxes) are heated to a high temperature, burned, dried, or allowed to decompose. It is present as a by-product in the manufacture of soap, resins, dye intermediates, linoleum, lard, varnish, fat-candles, glue and linseed oil. Likewise, it may be a hazard in tinsmithing and galvanizing.

TECHNICAL FILE ON TOXIC GASES AND VAPORS

D 88. SYMPTOMS. The exposure to acrolein is similar to that of formaldehyde, except that the irritation is even greater and prolonged exposure may cause a chronic bronchitis. Irritation of the eyes and tearing, a tickling sensation in the throat, and a biting feeling all along the air passages are the usual early symptoms. The exposed worker upon noticing these signs should make his way to the open air at once.

D 89. TREATMENT. Treatment and prevention of acrolein poisoning follow the methods outlined for formaldehyde. The International Critical Tables suggest 3.3 parts per million as a safe concentration for the gas.

D 90. DIMETHYLSULPHATE. .Dimethysulphate is a volatile liquid, which, together with its vapors, has a strong corrosive effect on the skin and mucous membranes of the air passages. Broncho-pneumonia is often possible from the irritation. A sudden large concentration of the gas can cause delirium, unconsciousness and death. Usual early signs, indicating a need for fresh air, are tearing, red eyes, hoarseness, difficult breathing and swallowing. Hemorrhages of the lungs are possible, bronchitis is frequent, photophobia has been reported.

D 91. INDUSTRIAL EXPOSURES. Makers and handlers of the product, dye makers, color makers and perfume makers are all exposed to this poisoning hazard. Treatment is according to symptoms and should be in the hands of a capable physician.

D 92. PREVENTION. Prevention methods are similar to those outlined for other gases of this type, like chlorine, that irritate the upper respiratory tract and tend to affect deeper tissues also. No safe concentration limits have been suggested, although it is known that 97 parts per million will cause death if the exposure is longer than ten minutes.

D93. LUNG, IRRITANTS. Gases which affect the lungs primarily and which, in passing through the upper air passages, act there to a lesser extent, include the following: nitrous fumes (nitrogen oxides), ozone, phosgene, phosphorous trichloride and pentachloride, and arsenic trichloride.

D 94. LITTLE WARNING OF EXPOSURE. These irritant gases in general are more dangerous because they do not give a warning sign by irritating the upper respiratory tract first, but they can damage the lungs immediately and overcome the exposed worker. Of course, this condition makes first air rescue work just that much more important, as a victim may not manager to get fresh air under his own power. The irritation to the eyes, skin and air passages in general still is a danger from these gases, but is not noticed usually as an early symptom. As a rule, these irritant gases, which are only slightly soluble, reach deep into the lungs before they react to fluids and the deeper the irritant can get the more serious are the consequences. They can poison acutely even after the victim is moved to fresh air. Victims either die within a few days or tend to recover completely.

D 95. NITROUS FUME POISONING. Control of this deadly hazard depends upon full realization of how it occurs and its earliest warning signs. Nitrous fumes are brown or reddish-brown, and being heavier than air, can be seen readily and avoided before contact is made with the body. The effects of the poisoning depend upon the length of exposure and the amount of fumes breathed in. Susceptibility of workers varies, but long exposure to even small amounts of the fumes can cause chronic damage to the lungs and other organs. Nitrous fumes consist of a mixture of nitrogen-oxygen gases, all of them irritating and dangerous, being toxic to any body cells they reach.

D 96. NITRIC ACID. Nitric acid, when spilled on organic substances, metals, or exposed to the air, breaks down to form nitric or nitrogen oxide, which is a colorless gas. This gas quickly forms a further compound with the oxygen of the air, called nitrogen dioxide, which has the characteristic reddish-brown color and is the chief hazard in the fume poisoning. Other gases which may be present are nitrous oxide, or laughing gas, which is commonly known as an anesthetic; nitrogen trioxide, and nitrogen pentoxide. Nitrous fumes can be caused whenever an electric arc or an explosion produces quick, extreme heat in the air. In addition, large quantities of dense, nitrous fumes can be given off by burning celluloid or photographic films, as was experienced in a Cleveland hospital disaster of several years ago.

D 97. TYPICAL INDUSTRIAL EXPOSURES. Workers exposed to this hazard include: Aniline workers, Artificial leather makers, De-brassers, Electroplaters, Galvanizers, gilders, Nitrators, Photographic film makers, Picklers (metals), Refiners (metals), Scourers (metals).

D 98.—SYMPTOMS. In nitrous fume poisoning the spectacular reactions may be delayed from six to twenty-four hours. Early warning signs of contact with the fumes are headache, spasmodic cough, a sensation of choking and smarting of the skin. Nitric acid itself quickly destroys skin tissues and, if not flushed off with water immediately, causes deep, painful burns as from a fire. A few seconds of undiluted contact with the eyes can cause blindness.

(To be continued)

A Report on the . . .

PRESIDENT'S CONFERENCE ON INDUSTRIAL SAFETY

THE UNITED STATES Department of Labor, Bureau of Labor Standards, has been considerably disturbed for several years now about the mounting toll of industrial accidents in the United States. The Labor Department felt that the vast resources of that branch of the government should be used to cut down this waste if possible. This resulted in the idea of a President's Conference on Industrial Safety. When the matter was broached to President Truman he immediately saw the value of this conference and instructed the Department of Labor to go ahead and plan it. There was a small, preliminary conference last Fall, but the first major conference was held in the City of Washington on March 23, 24 and 25, 1949.

The meetings were held in the auditorium of the Department of Labor and were attended by more than 1500 leaders of business, labor, state and federal governments, insurance companies, educators and private safety organizations.

President Truman opened the meeting with a fifteen minute talk on the problem, calling attention to the fact that industrial accidents cost American industry and labor over four billions annually and that approximately 90% of the injuries causing this loss are preventable.

The President's talk was followed by a splendid address by the Secretary of Labor, Maurice J. Tobin, and an equally good talk by Governor John O. Pastore of the State of Rhode Island whose administration, by aggressive methods, has reduced the accident rate in Rhode Island by 37% over the last four years. Gov. Pastore also disclosed the interesting fact that half the states spend less than 10c per worker per year in accident prevention and safety inspection. This compares with a conservative estimate that last year industrial accidents cost American industry and labor over $90.00 per worker.

The remaining program was taken up with reports of the seven major committees, some of which evoked lively discussion. The various Labor Unions represented were very vociferous in their demands that Industry do something about industrial accidents and the setting up of safety standards, stating that "if Industry doesn't do it, the Unions will."

Occupational Hazards believes that the conference was well worth while and made a splendid start. Both the Labor Unions and the U. S. Dept. of Labor are apparently going to take a much greater interest in the problem in the future. We believe that the scope of the national industrial safety movement will be greatly broadened over the next few years, provided such conferences are continued and provided the states do their part through state-wide conferences.

Copies of President Truman's address and those of Secy. Tobin and Governor Pastore are available. Also a limited supply of the reports of the seven committees. Write to The President's Conference on Industrial Safety c/o U. S. Dept. of Labor, Washington, D. C.

Available both as a floor-mounted type (shown) or an overhead installation. Complete with a motor-driven sludge removal conveyor, where required.

AUTOMATIC ELIMINATION
from Collection to Disposal

Operators of modern plants have long since learned the economy of ridding their shops of destructive dust and smoke fumes. Men who work in plants free of these health hazards feel better, work better, produce more. And the accident rate is lowered. In actual plant operation, the Schmieg CENTRI-MERGE method of dust and fume elimination has shown marked advantages over any other system. Dust and fumes are collected *immediately they occur*—shot back on a stream of air through ducts to the Collection Unit. In the washing chamber of this unit—a veritable tornado of seething, churning water-dust is washed and scrubbed from the air and flooded into the sludge tank below, permanently trapped under water. Fumes go out the exhaust. AUTOMATIC operation from start to finish.

THE best AIR PURGE is CENTRI MERGE

Our engineers will be pleased to consult with you in the solution of your problem

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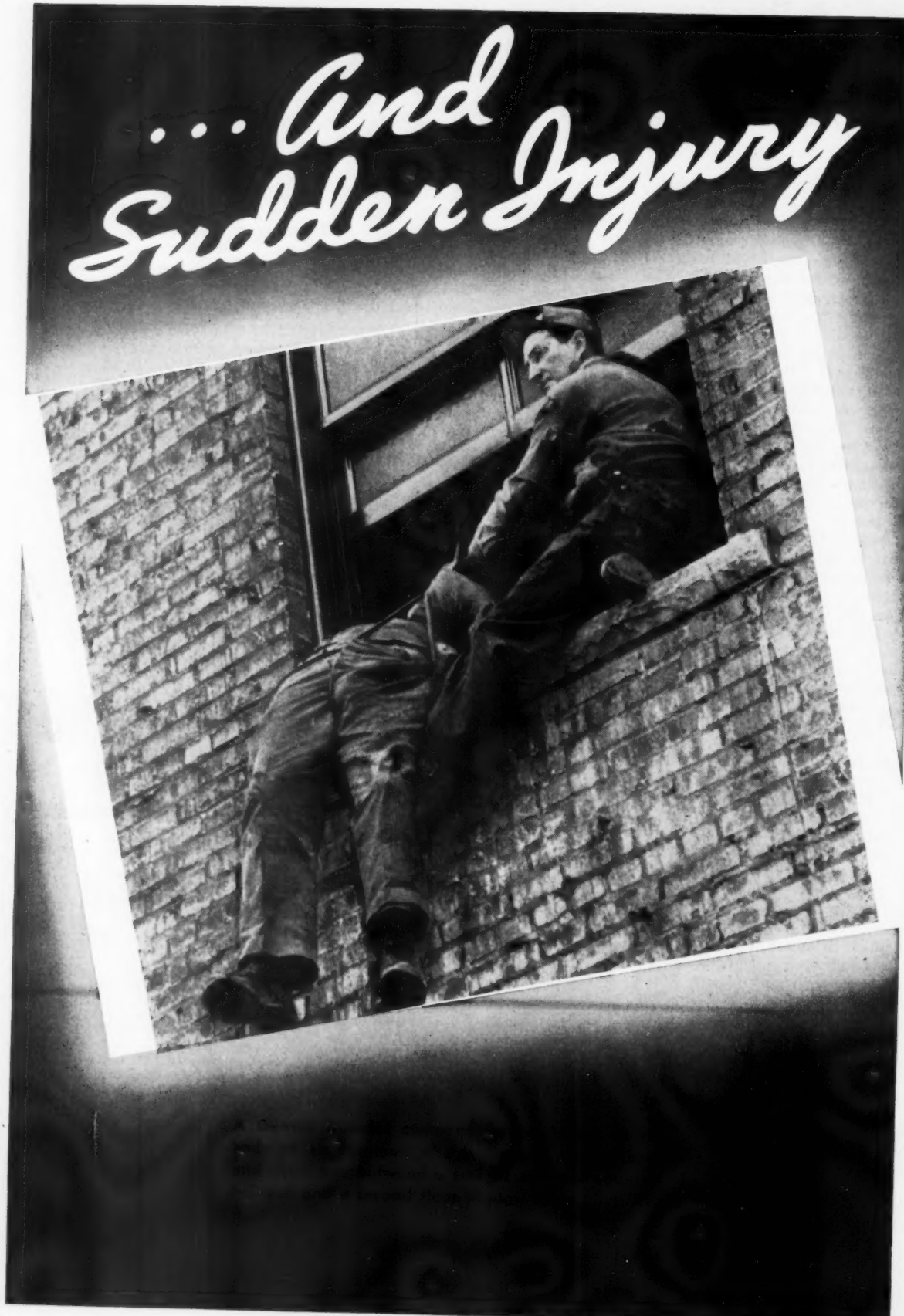
303 PIQUETTE AVENUE • DETROIT 2, MICHIGAN

. . . And Sudden Injury



And Sudden Injury

The Denver Post, Sunday, March 20 . . . *Louis Hawkins, 52, was injured fatally Saturday afternoon when his neck and shoulders were pinned between a freight elevator counter-balance and a second floor window ledge. Hawkins, an employee of the Duffy Transfer and Storage Company, was working with a crew lowering some heavy office equipment down the shaft to the basement. They laid a steel beam across the shaft and Hawkins was preparing to anchor a pulley to it when the elevator was called to one of the upper floors.*

Hawkins crawled across to an open window on the opposite side, and the beam was removed. The elevator went by. Hawkins then apparently leaned into the shaft and was pinned to the wall by the descending counter-balance of the elevator. The lower part of his body dangled outside the window. The elevator jammed.

Patrolman Frank Derby and a crew of firemen worked 20 minutes before they could release Hawkins and carry him down a fire ladder to the ground. He died on the way to Denver Hospital. Hawkins had worked for the Duffy Company twenty-five years.

The above newspaper account of the tragic accident, illustrated on the opposite page causes one to think again how unnecessary the vast majority of all accidents are. Second-guessing by sportwriters can or cannot be considered important, but this habit should be acquired by all those persons concerned with accident prevention. Upon study of accidents that have happened, it usually becomes easily apparent how such accidents could have been avoided. This is the kind of information that should be recorded and applied in similiar circumstances to avoid repetitions of the same kind of accidents.

Before any hazardous work is started, however, workers should not take for granted that someone else realizes their danger. The foreman in charge of the work—the men themselves—should make certain that before exposing themselves to such dangers, the machine or equipment that creates the hazard be shut down in such a way that it is impossible to work such equipment until the men are through work and completely out of the danger zone.

Chief Hot Foot Like'um New "PEAK" Cap!

. . . YOU'LL SAY IT TOO, WEARING A WHEELER FLAME-PROOF "PEAK" CAP! . . . . . .

You'll like the smart safety styling. "PEAK" Caps are flame-proofed. They have "feld" protected seams, and a long visor with fibre insert to shield the eyes and face. They're an "all around" cap . . . for general factory or foundry work, for welding, etc. . . . For protection against dangerous overhead molten metal splashes, and sparks . . . WEAR "PEAK" CAPS!

"PEAK" Caps come in a variety of materials — featherweight asbestos, flame-proof jean cloth, leather, and wool; a selection of sizes — 6¾", 7", 7¼", 7½", 7¾"; and ear flaps which fold up into the cap when not in use may be had for a slight additional charge.

Your choice, of four attractive colors in our No. 1050 "PEAK" Cap made of flame-proof jean cloth — white, dark green, blue or brown.

"PEAK" CAPS ARE WAY *AHEAD* IN *HEAD* PROTECTION! THE PEAK OF PROTECTION!

***ORDER ONE* TODAY! AND *DON'T LET* ANYBODY SNATCH IT FROM YOU!**

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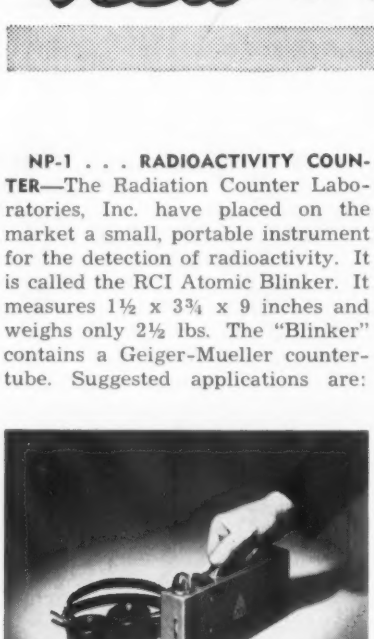
New PRODUCTS

NP-1 . . . RADIOACTIVITY COUNTER—The Radiation Counter Laboratories, Inc. have placed on the market a small, portable instrument for the detection of radioactivity. It is called the RCI Atomic Blinker. It measures 1½ x 3¾ x 9 inches and weighs only 2½ lbs. The "Blinker" contains a Geiger-Mueller counter-tube. Suggested applications are:



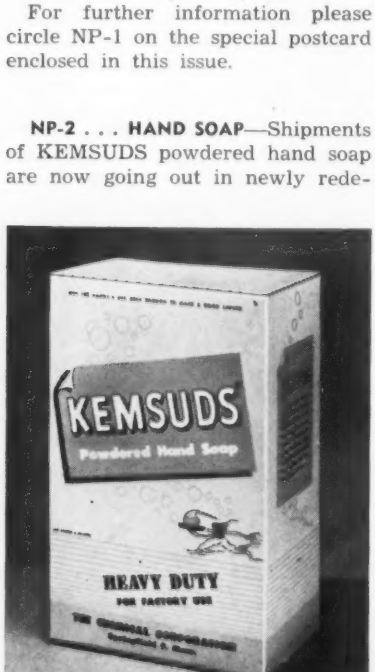
Detection of lost radioactive materials, prospecting for them, detecting contamination by them, etc.

For further information please circle NP-1 on the special postcard enclosed in this issue.

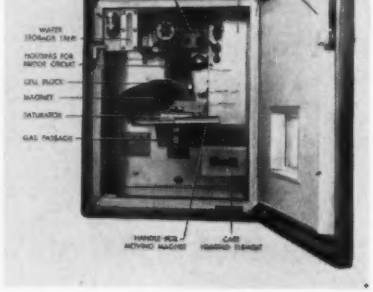
NP-2 . . . HAND SOAP—Shipments of KEMSUDS powdered hand soap are now going out in newly redesigned packages which features handier shape, better balanced weight and generally more attractive appearance. The KEMSUDS inside is better, too, for The Chemical Corporation has recently announced improvements in its product's formula which gives faster wetting, better solvent action on stubborn dirt and longer lasting suds.

KEMSUDS with pure, white Ivory Soap base is made in Heavy Duty, Light Duty and Office Grade. KEMSUDS with vegetable soap base is made in Utility Grade to offer a good product in the low priced field.

For further information, please circle NP-2 on the special postcard enclosed in this issue.



NP-3 . . . OXYGEN METER—After several months of field testing, The Hays Magno-Therm Oxygen Meter is now in production according to an announcement just released by The Hays Corporation.



This device continuously analyzes, indicates and records the percentage of oxygen in boiler flue gases and in industrial gases. The meter employs no chemicals, no liquids, or gaseous fuels and no combustion in its operation. A strong safety factor is claimed for the Hays method of detection in that the temperature of the analyzing cell is too low to support combustion. Furthermore, the presence of hydro-carbon gases and vapors does not affect the accuracy of the instrument.

For further information, please circle NP-3 on the special postcard enclosed in this issue.

NP-4 . . . FIRST AID CABINET—New on the market are the "Clear-view First Aid Cabinets" now being manufactured by Industrial Products Co. Rigid all steel construction.

Clear glass door allows contents to be seen at all times. All dressings are sterilized.

For further information, please circle NP-4 on the special postcard enclosed in this issue.

NP-5 . . . SAFETY OXFORD—The Iron Age Division, H. Childs & Co., Inc. has introduced a new, lightweight woven safety oxford especially designed for comfortable wear

during hot weather. This safety shoe is made of soft elk, finished in a rich burgundy tone.

For further information, please circle NP-5 on the special postcard enclosed in this issue.

NP-6 . . . GERMICIDE—Huntington Laboratories, Inc. has developed a new and unique disinfectant. "San Pheno X" is said by J. L. Breen, President of Huntington, to be absolutely safe for all disinfecting purposes. It is non-corrosive, non-irritating, non-caustic, powerful, economical and the odor is pleasant. According to the manufacturer, this product is capable of doing every sanitizing job in the building and leaving in its wake a fragrant odor much like spring-fresh apple blossoms. Standard dilution is 1 part San Pheno X to 200 parts water. It is recommended for use in the industrial dispensary for sanitizing instruments, tray carriers, bed pans, linens, rubber sheeting, etc. San Pheno X, when used as a spray or in the rinse water, disinfects floors, walls, furniture and all inanimate objects unharmed by water.

For further information, please circle NP-6 on the special postcard enclosed in this issue.

NP-7 . . . LINE MARKING EQUIPMENT — Universal Manufacturing and Sales Co. announce the addition of MARK-RITE "Line Master" to their family of line-marking equipment. The self-propelled "Line Master" is specially designed for use by industrial organizations where it is desirable to maintain a substantial footage of line. It reproduces lines from 2" to 6" in width. The rear

caster may be locked, by means of a lever, in a fixed position to insure a straight line or released so that it will rotate freely and permit easy turning and maneuvering of the machine. The five gallon paint container is readily removable for easy cleaning.

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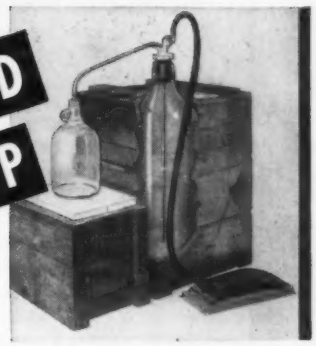

HAND OR FOOT OPERATED

For carboys, drums and barrels. A smooth flow starts quickly . . . no dangerous spurts on splashes. Lifting and tilting of container is eliminated. No dangerous pressure developes and flow can be instantly stopped.

Equipped with flexible Saran tube and adapter for openings larger than 2 ¼" diameter. Long life even when used with most corrosive liquids.

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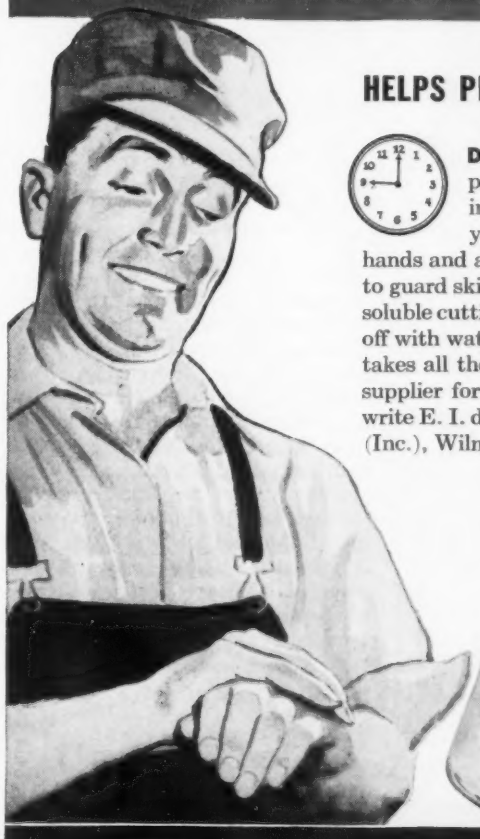

HELPS PREVENT TIME LOSS!

Du Pont PRO-TEK hand protective cream acts like an invisible work glove. Have your workers rub it on hands and arms before starting work, to guard skin against paint, grime, insoluble cutting oils, etc. Easily washed off with water when the job is done—takes all the grime with it. Ask your supplier for Du Pont PRO-TEK. Or write E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

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REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING THROUGH CHEMISTRY

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HAND PROTECTIVE CREAM

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Miller ChemCord Belts have been developed to provide certain safety to workers in the chemical and petroleum industries. ChemCord is a highly flexible webbing that to a large extent resists the effects of acids, fumes and smokes containing acids, as well as water high in mineral content.

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Miller

EQUIPMENT CO., INC.

FRANKLIN, PENNA.

For further information, please circle NP-7 on the special postcard enclosed in this issue.

NP-8 . . . WELDING HELMET—The new "Blinker" welding helmet assures better, safer and faster welding, according to the manufacturer, Welders' Products. Its movable lens principle permits the welder to lower and raise the filter lens (without raising his helmet) by a simple downward or upward movement of his chin against a pivoted chin strap. This leaves both hands free at all times, whether welding or not.

For further information, please circle NP-8 on the special postcard enclosed in this issue.

NP-9 . . . EYE GOGGLE—A new cup-type goggle claimed to be one of the safest and most comfortable goggles of its kind has been announced by the Chicago Eye Shield Company. The goggle features newly developed moulded thermoplastic cups which are engineered to fit both left and right eye areas snugly yet gently, and have broad contact surfaces which eliminate "pressure spots." Another feature of this newly designed Cesco goggle is the moulded rubber Comfort - King headband, which provides added comfort to wearers. It will not kink, curl or twist, and has no buckles or sharp edges.

For further information, please circle NP-9 on the special postcard enclosed in this issue.

There's No "CURE-ALL" IN CUTTING OIL SANITATION

Shop conditions vary widely—so do coolant handling problems. To prevent costly coolant spoilage with its foul odors and to maintain practical sterility, your Dolge Service man is prepared to render this service:

He will take samples of your coolant for free bacteriological and chemical examination in Dolge laboratories.

You will receive a complete confidential report, including the bacterial count.

Only then, and when found necessary, the particular DOLGE STERIDOL GERMICIDE to fit your requirements will be recommended. Employed as directed, the preparation will not irritate the skin or corrode metals . . . and it will prevent spoilage . . . at the cost of less than 1 cent per gallon of coolant.

Write for "Cutting Oil Sanitation"

STERIDOL
THE C. B. DOLGE CO.
WESTPORT, CONNECTICUT

Useful Literature

UL-2 . . . "Dust Engineering" is the title of a magazine dealing with dust, dust problems and dust control equipment published by the American Air Filter Co., Inc. The latest issue (Volume 10, Number 1—First Quarter, 1949) is an all-photograph number showing many interesting and excellent installation photographs of dust control equipment.

UL-3 . . . A new 12-page catalog has just been published by the Nolan Company, formerly the Mining Safety Device Company, showing all the railroad devices and related industrial equipment now being manufactured by this firm. New Nolan products announced in the well-illustrated catalog include a portable car block, an end rerailer, a heavy duty rerailer, and a portable detrailer for railroad safety service.

UL-4 . . . The new four-page booklet A-706 published by U.S. Hoffman Machinery Corp., describes the wide number of application for Hoffman heavy-duty portable and stationary dust control systems in increasing production, improving product quality, reducing maintenance costs and promoting better plant safety, cleanliness and employee morale. A guide to the selection of right equipment for specific plant requirements is included.

UL-5 . . . The Breuer Electric Mfg. Co. have recently prepared a new booklet on plant maintenance. "The Tornado Method" is the title of this new 34-page booklet which covers in detail practically every problem of plant and institution floor care and maintenance.

UL-6 . . . "The Do's and Dont's of Rubber Mat Care" by American Floor Products Company makes an excellent wall chart for those persons interested in the maintenance of rubber mats.

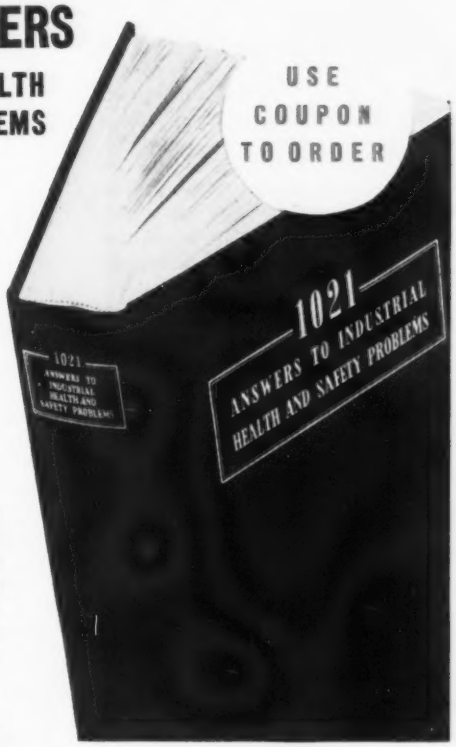
UL-7 . . . The American Ventilating Hose Co. have issued a 12-page folder describing their Lightweight Flexible Hose product. Their slogan "hose for use in any industry" describes the contents of this folder. These flexible tubes can be used in air conditioning equipment, blowers and exhausters, buffing machines, dust exhaust to collectors, cleaning equipment with air jet, crop dusting, dust collectors and filters and a host of many other industrial applications.

UL-8 . . . A two-color booklet describes the Dollinger Corporation Model A-3 STAYNEW Automatic Filter for use in dust removal applications. The Model A-3 filter has been designed to meet the requirements of a wide variety of conditions, each calling for some particular outstanding ability such as large dust handling capacity, low resistance, high efficiency or a combination of two or more of these features in a single unit.

EXAMINE THIS VITAL BOOK FOR 10 DAYS FREE AT OUR RISK!

1021 ANSWERS

TO INDUSTRIAL HEALTH AND SAFETY PROBLEMS



Contains almost 1000 pages of facts not easily found elsewhere. No single volume is so complete. Every safety or health question arising in your plant answered quickly, easily.

All industrial health questions are approached from industrial substance rather than pathological consideration. "1021" explains symptoms of each industrial substance and its effect on workers' health. Helps you recognize toxic exposures.

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INDUSTRIAL

Accidents in the News . . .

These accidents are taken from the pages of the nations Newspapers. They've all happened—they didn't have to!

Hackensack, N. J., Bergen Eve. Rec.:

Harry Walther, 59, Teaneck, suffered a possible fracture of the hip yesterday, Maywood police reported, when he fell from a ladder while repairing an electric fixture at the Lorraine Rubber Works on West Hunter Avenue. He was taken to Hackensack Hospital by members of the First Aid and Emergency squad in the Maywood ambulance. Police said Walther was standing on a 10-foot ladder when the ladder slipped and Walther fell to the floor, striking a machine.

Prevention:

A few seconds time can usually prevent accidents such as that described above. Ladders should be so placed that one does not have to stretch way out to reach the job at hand; be placed so that its legs are not resting unevenly or on a slippery surface nor too far or near to the wall. If a step ladder, care should be taken that the ladder is fully extended and the braces locked. If possible some other person should be stationed at the foot of the ladder to help steady it—particularly if ladder is a tall one. All ladders should be equipped with safety ladder shoes which do much in preventing ladder slips. The vast majority of ladder accidents occur out of pure carelessness and could be prevented by the application of a reasonable amount of horse sense.

◆

Liberal, Kansas, Southwest Times:

E. L. Maynard received eye injuries from chemical fumes when he opened a can of pipeline enamel while working with the Fulton Pipeline Construction Co. near Satanta.

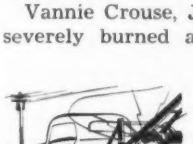
Prevention:

Law makes it imperative for manufacturers to label outside of can containing such material and the majority of such labels bear conspicuous warning signs if any danger is involved upon opening or using contents of such cans. Employee's attention should be called to such dangers.

◆

Concordia, Kansas, Blade-Empire:

Vannie Crouse, Jr., of Clyde, was severely burned and knocked unconscious by a charge from a 2300 volt electric power line when a winch truck on which he was working backed under the line and broke it. The falling line struck him on the head. He was given artificial respiration and first aid treatment by a doctor in Clyde and brought to St. Joseph hospital in Concordia. He suffered several burns on his back and a large burn on his head. He regained consciousness several hours after he was taken to the hospital and was reported as improving.



Prevention:

Operators of portable cranes, winch trucks and similar types of equipment should exercise great care when operating in unfamiliar territories. A survey should be made to determine the location of any power lines in the area prior to starting work so the operator is aware of them and makes sure his equipment does not come into contact with same while doing the job at hand.

◆

Topeka, Kansas, Capital:

John E. Reed, 28, employee of the Kansas Sand Co., suffered an injury to his left ankle in a fall from a truck near Sixth and Van Buren. Carter's Ambulance took him to Stormont Hospital where he received emergency treatment.

Prevention:

If necessary for employees to ride trucks while in transit they should not be permitted to sit in precarious positions where the first jolt or sharp turn will throw them. If possible, men should sit or stand as far forward as they can. Tail gates, if any, should be in closed position. It goes without saying that the driver of such a truck should proceed along his way with extra caution in order to protect the safety of the men riding his truck.

◆

New York, N. Y., N. Y. World-Telegram

James Murphy, 47, an ironworker's helper, fell 90 feet into a steel tank at the Liquid Carbonic Corp., plant yesterday, suffering a broken leg and internal injuries. The worker fell from a scaffold and landed on a pile of steel shavings. He was taken to American Legion Hospital where his condition was described as "improved."

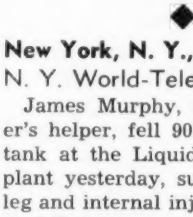
Prevention:

Regular standard safety belt and harness equipment.

◆

Hoboken, N. J., Jersey Observer:

Lawrence Murray, 29, a longshoreman working last night on Pier D, foot of Pearl street, was struck on the right hand by a case of merchandise which fell from a pile. He was detained at the Medical Center after undergoing a partial amputation of the right thumb.



Prevention:

Cases of material should be tiered in stacking so that hazardous perpendicular stacks are avoided. Care should be taken in the operation of lift trucks so that piles are not jarred in such a manner as to cause cases to tumble.

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Dockson's No. 1120 face shield shown here.

Dockson HEAD AND EYE PROTECTION

You get protection-plus from Dockson "Better Built" head and eye protection. Years of experience have taught us how to give you the maximum of protection plus greater comfort and moderate cost.

There is a DOCKSON distributor near you. Name on request.

Write for our complete safety equipment catalog.

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CUFF UP—Prevents liquids from dribbling onto arms or trickling inside gloves.

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• For best hand protection plus low cost, you'll want Turn-Cuffs in Surety's Sureseal Synthetic —super-resistant to chemicals, super-resistant to wear. Turn-Cuffs also available in neoprene and natural rubber. For sizes and prices write to Dept.

FOR SAFETY PLUS

For *better* rubberized Work Gloves, look for the HOOD Trade Mark—a sign of quality since 1896. Styles to suit every requirement. Send for folder. Order from your jobber.

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How Much Does Your Washroom Maintenance *Really* Cost . . . . . ?

Materials . . . $?

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● The sanitation supplies used in washroom maintenance represent a small fraction of the total cost. Under Gerson-Stewart's plan of Systematized Sanitation, experienced maintenance specialists recommend improved products and more effective methods and procedures, whereby total costs are lowered through more economical use of your present plant-keeping personnel. Industrial leaders have benefited from Systematized Sanitation for more than 30 years.

Write today for booklet about this simple, individualized plan which enables your present personnel to do more tasks—better!

SYSTEMATIZED G S SANITATION

The GERSON-STEWART Corp.
LISBON ROAD · CLEVELAND, OHIO

From Page 23

of Mines specifications for all cases where the air supply pressure exceeds 25 pounds which, in practice, usually means all installations where air is obtained from an industrial compressed air line. This is intended to avoid accidents in the event that the full pressure of the air line is suddenly applied to the helmet supply line.

Some units (BM approval numbers 1907, 1914, 1918, 1919) include a regulating valve in the airline at the operator's belt, as a part of the detachable coupling. This is permissible according to the Bureau of Mines approval schedule, provided that it will pass a minimum of 2 cubic feet per minute when it is in the "closed" position.

Measuring Helmet Air Supply

One method of testing the adequacy of the air supply is to measure the concentration of dust under the helmet, during actual work, with a midget impinger. The simpler method of testing the air supply is to measure its rate of flow to ascertain whether it equals or exceeds the minimum required rate of 6 cubic feet per minute for loose fitting helments or 4 cubic feet per minute for tight fitting face pieces. The flow to the helmet should always be measured. This has not, heretofore, been done commonly because of lack of simple techniques. *(to page 46)*

FIGURE 8
One of the air flow meters inserted in the air line for measuring rate of air supply to helmet.

Stanzoil

Light Weight RSW-13's

Tough, Sheer... Sure Grip on Oily Parts

These new improved light weight Stanzoil RSW-13's are designed especially for handling small parts in testing and assembly, food products packing, etc. Shaped to fit the fingers naturally in gripping position, more hand comfort over long periods of wear. Finger tip gauge cut to .018 for greater sensitivity. Non-slip grip aids precision workers, speeds action. Your plant shows more productivity when employees aren't fumbling with thick, unwieldy rubber gloves. Write today for complete *Stanzoil* catalog.

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The Pioneer Rubber Company

638 Tiffin Road Willard, Ohio, U. S. A.

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OVER *30 Years* OF QUALITY GLOVE MAKING

Have *Scott Air-Pak* handy—to Save Production and Maintenance Dollars!

Scott Air - Pak breathing equipment supplies fresh, cool AIR—not oxygen—to the user, for maximum speed and safety in routine or emergency work in toxic areas. Whether you want equipment for work of short duration (top, right), for unlimited periods (bottom, right), or something in between, you'll find the COST-SAVING unit for the job is a Scott AIR-PAK.

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ESTABLISHED IN 1932 Scott FOR SAFETY—FOR SERVICE

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

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BLAW-KNOX GRATING

FOR SAFE FOOTING

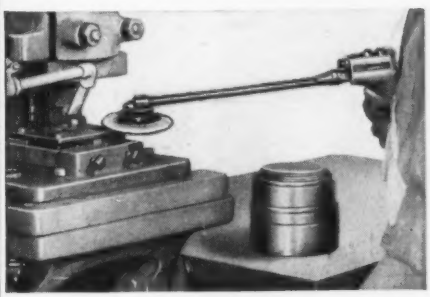
This one-piece electroforged steel "material" is furnished to your specifications—cut to fit any shape or area. Installation is quick and sure—requiring only simple clips supplied with order . . . Safe footing at all times is assured by twisted cross bars . . . Admits maximum amount of light and air . . . Only maintenance is an occasional coat of paint . . . For safety's sake, mark your grating specs—"Blaw-Knox".

BLAW-KNOX DIVISION

of Blaw-Knox Company

2109 Farmers Bank Bldg.

Pittsburgh 22, Pa.



KEEPS HANDS Out of DANGER ZONE

LITTELL

Pres-Vac SAFETY FEEDER

LITTELL Safety Feeder speeds up the picking up and feeding materials into presses, keeping hands out of Danger Zone. A strong vacuum is formed in the cup. Unit uses compressed air; 40 to 45 lbs. operates. Picks up any flat-surfaced material; wet, oily or dry. Single- and double- and triple-cup types. Littell makes a complete line of press-room equipment for faster, safer production.

REQUEST BULLETINS

F. J. LITTELL MACHINE CO.

4109 Ravenswood Ave., CHICAGO 13, ILL.

Air Flow Meters for Helmets

The helmet flow meter kit illustrated in Figure 7 was devised in connection with the preparation of this Manual. Each approved helmet includes a quickly detachable coupling in the air hose line located at the man's belt and rear. This is a convenient point at which to insert a flow meter of the pressure-drop type. The kit consists of a series of flow meter units, each identical except for the end fittings; they correspond to the fittings used by each helmet manufacturer.

To measure air flow, a flow meter is selected which has end fittings corresponding to the particular helmet in use, the helmet hose line is opened at the coupling and the flow meter inserted. See Figure 8. A restricting orifice in the flow meter causes a pressure loss which is read from either a gage or a water-filled U-tube. This reading is converted to air flow in cubic feet per minute by reference to a calibration graph.

The measurement should be made with all air supply valves adjusted exactly as when working. Note the setting of any adjustable valves and record them. If the air flow is less than the minimum prescribed (4 or 6 cubic feet per minute depending upon type of helmet) the cause should be ascertained. It is not sufficient to request the worker or foreman to adjust control valves wider in the future. (See section on "Air Quality.")

Estimating Air Flow by Pressure Gage

The approval of a helmet includes the hose size; in order to insure the minimum required air flow, the pressure is specified at the pipe supply line where it connects with the hose. Knowing the required pressure for any helmet and noting the length of hose it is possible to estimate, roughly, whether the proper conditions prevail. A *pressure gage is essential.* Too frequently it is not included in the installation. It should be a required element for every abrasive blasting chamber.

In Table 3 are given the pressures required in order to meet air flow requirements, when the hose lengths referred to therein are used. The following items should always be checked: (1) the hose length, (2) its approval number (as an indication that the approved hose is in fact being used), (3) that the regulating valve (if any) at the operator's belt is wide open; (4) if there are hose repair couplings, air flow in the hose line will be somewhat lower than otherwise, and its approval status (Bureau of Mines) is impaired.

With the more usual hose length of 10-15 feet, the pressures noted in the table will supply more air than the minimum (but less than 20 cubic feet per minute). The Bureau

TABLE 3
MINIMUM GAGE PRESSURE REQUIRED AT THE FIXED END OF AIR SUPPLY HOSE WHEN HOSE LENGTH DOES NOT EXCEED 50 FEET*

Name	*Approval Number*	*Required Gage Pressure lbs./sq. in.*
MSA Abrasive Mask Blast Helmet	1907	8
MSA Abrasive Mask Blast Helmet	1907A	12
Pangborn, Blast Helmet (DD-4)	1908	3
Sly Purair Helmet	1911	3
Pangborn, Blast Helmet (DF-2)	1915	3
Willson Abrasive Blasting Helmet	1914	12
Cesco Health Guard Direct Air Mask	1918	2
McDonald Blastfoe Abrasive Helmet	1919	8

*Except Willson and Blastfoe, approved for maximum hose length of 30 feet, and 15 feet, respectively.

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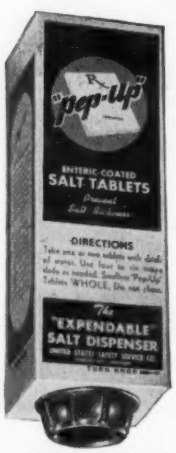

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of Mines approval schedule also specifies that the air flow should not exceed 20 cubic feet per minute and maximum pressures to this end are specified with each approval. However, the discomfort to the operator that would result from excessive air flow normally takes care of that situation. The maximum pressures permitted with short hose lengths (15 feet) are as follows: MSA, 15 to 20 pounds; Pangborn, Sly and Cesco, 8 to 9 pounds; Willson, 25 pounds; and McDonald, 15 pounds. (Willson maximum pressure applies to a minimum hose length of 12.5 feet.)

Air Quality

If it is found that air flow has been adjusted below the minimum, the reasons should be sought. The mere issuance of advice or orders that the controlling valve must be set more wide open is insufficient.

It may be that the supply air is too cold in cold weather which causes the worker to reduce the flow to lessen discomfort. This may be true in cases where the air line receiver is located at the distance from the blasting operations and, particularly, where the line must run outdoors or through a cold area.

The air supply line may be equipped with an electric resistance heater to overcome this difficulty.

The operator's sensation of comfort is the most reliable indication of proper or improper temperature.

Acknowledgments

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The National Industrial Sand Association was represented by a committee consisting of: A. Warsaw (Chairman), Hamilton Allport, George Pettinos, Jr., E. O. Schneider, C. R. Wolf, T. C. Waters (Counsel), Stanton Walker (Consulting Engineer).

SAFETY AT ANSUL

From Page 25

work, and discusses safety problems which arise and points the way to their solution.

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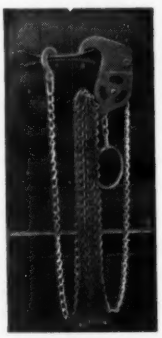

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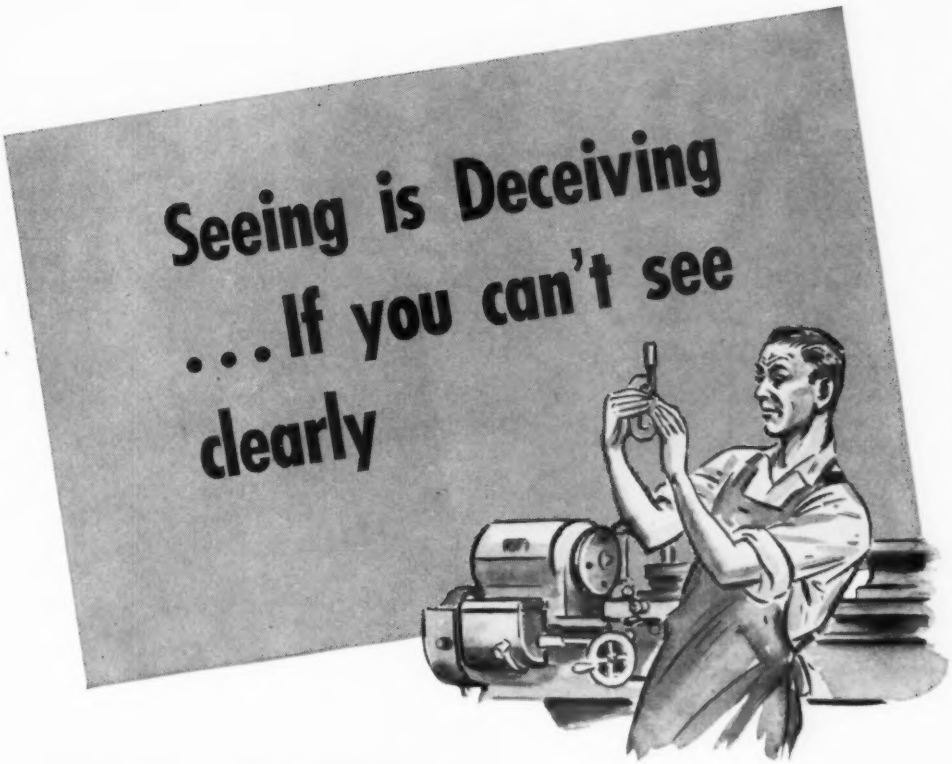

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